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SUPPLEMENTAL DATA TO PHOTOFACT 2 SET 117.

ADMIRAL CHASSIS
20T1, 20V1

Run 15 in 29V1Ch.
Run 8 in 20T1 Ch.

Late production changes on Admiral chassis 20T1 and 20V1 are as follows.

TO MINIMIZE VERTICAL BARS IN PICTURE.

A filter network was added between terminal 8 of the horizontal output transformer and pin 5 of the damper tube to reduce to a minimum the brightness of shadow-type vertical bars which may appear at theleft side of the picture. The filter consists of a 680Ω 2watt resistor, a .0022MFD capacitor, and an RF choke (Part # 73B8-3). The components are connected in parallel. A pre-assembled filter may be obtained under Part # A34595.

It is important that this filter be placed inside the high voltage housing rather than under the chassis.

When the horizontal output transformer Part # 79C32-1 is used one filter is required while transformer Part # 79C36-1 may require two filters.

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 SET 134

RCA VICTOR MODELS 7T103B, 7T104B, 7T112B, 7T122B, 7T123B, 7T125B

Early production RCA Models 7T103, 7T104, 7T112, 7T122, 7T123, and 7T125 were covered in Photofact Folder 9 in set 134. Late productions versions of these models have the suffix letter B following the model number. This letter designates that an electrostatic focus type tube is employed instead of a magnetic focus type tube.

Production changes made on these models to adapt them to the "B" version are as follows:

The focus magnet, M8, removed.

The picture tube changed to type 17GP4.

The horizontal output transformer changed to part #76381.

A type 1V2 tube focus rectifier added.

A .82Ω focus rectifier series filament resistor added.

A 12Meg voltage divider resistor added.

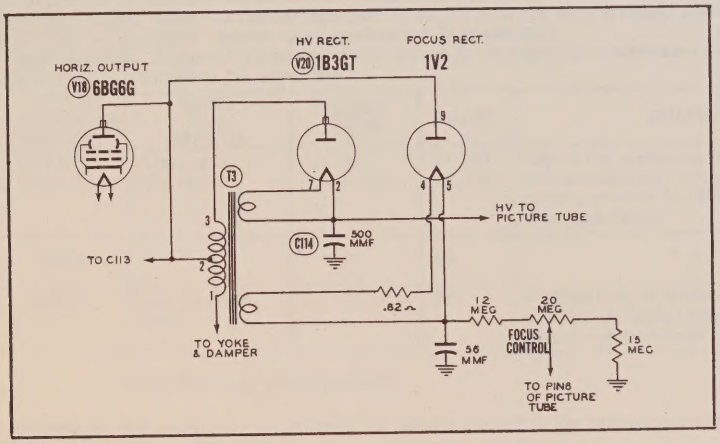
A 15Meg voltage divider resistor added.

A 20Meg focus control added part #76378.

A 56MMF focus rectifier filter capacitor added.

A picture centering ring magnet part #76375 added.

The partial schematic below shows the addition of the focus supply circuit to the horizontal output circuit.



PRODUCTION CHANGES
BULLETIN 26

PRODUCTION CHANGES
BULLETIN 26

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AIRLINE
MODELS 15BR-1536B, 15BR-1537B

AIRLINE
MODELS 15BR-1536B, 15BR-1537B

AIRLINE
MODELS 15BR-1536B, 15BR-1537B

AIRLINE MODEL 15BR-1536B

TRADE NAME	Airline, Models 15BR-1536B, 15BR-1537B
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AV6 DET.-AVC-AF, 50C5 Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .25 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set pointer to the last notch at the upper left hand end of dial backplate.
Use isolation transformer, If available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 7, (Grid) of 12BE6, (V1). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1700KC	"	"	A5	"
3.	"	Loop	1400KC	Tune for max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver Adjust for maximum output.

PUSH BUTTON ADJUSTMENTS

Since the push buttons are mechanical, any button may be adjusted for any station within the receivers tuning range.
Loosen the locking screw in the center of the tuning knob.
Depress the first push button, and while holding it down, carefully tune in the desired station. Release the button.
Repeat this procedure for all buttons.
After all push buttons are adjusted, turn the tuning control to the low frequency end stop and tighten the locking screw.

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PARTS LIST AND DESCRIPTIONS

AIRLINE
MODEL 15BR-1536B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	13BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF	12AV6	12AV6	7BT	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	150	A-8C-18713	PRS150/80-40		EDL8415C		R1136	Filter
B	50	150		PRS25/50					Filter
C	40	25							Output Cathode
C2	.02	400	C-8D-10774	P488-02	DF-203	PTE4S2		4TM-S2	AVC Filter
C3A	220		♦A-201-14397	SI220	D6-221	5R5T25	GP2K-221	♦34C3	Diode RF Filter
B	.002			P688-002	D6-202	PTE6D2	GP2-333-202		Audio Coupling
C	220			SI220	D6-221	5R5T25	GP2K-221		AF Amp. Plate
D	.005			P688-005	D6-502	PTE6D5	GP2-333-502		Audio Coupling
C4	.02	400	C-8D-0774	P488-02	DF-203	PTE4S2		4TM-S2	Output Plate
C5	.047	400	C-8J-16081	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter
C6	.18	400	C-8D-11111	684-2		GT4P2			Line Isolation
C7	.01	200		P488-01	DF-104	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling *

♦ Items C3A, C3B, C3C, C3D are combined in one unit.
* Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	A-10A-10626	Q13-137	AM-63-Z	BSK-70-S	Volume Control
B	Saaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A Per Instructions

RESISTORS

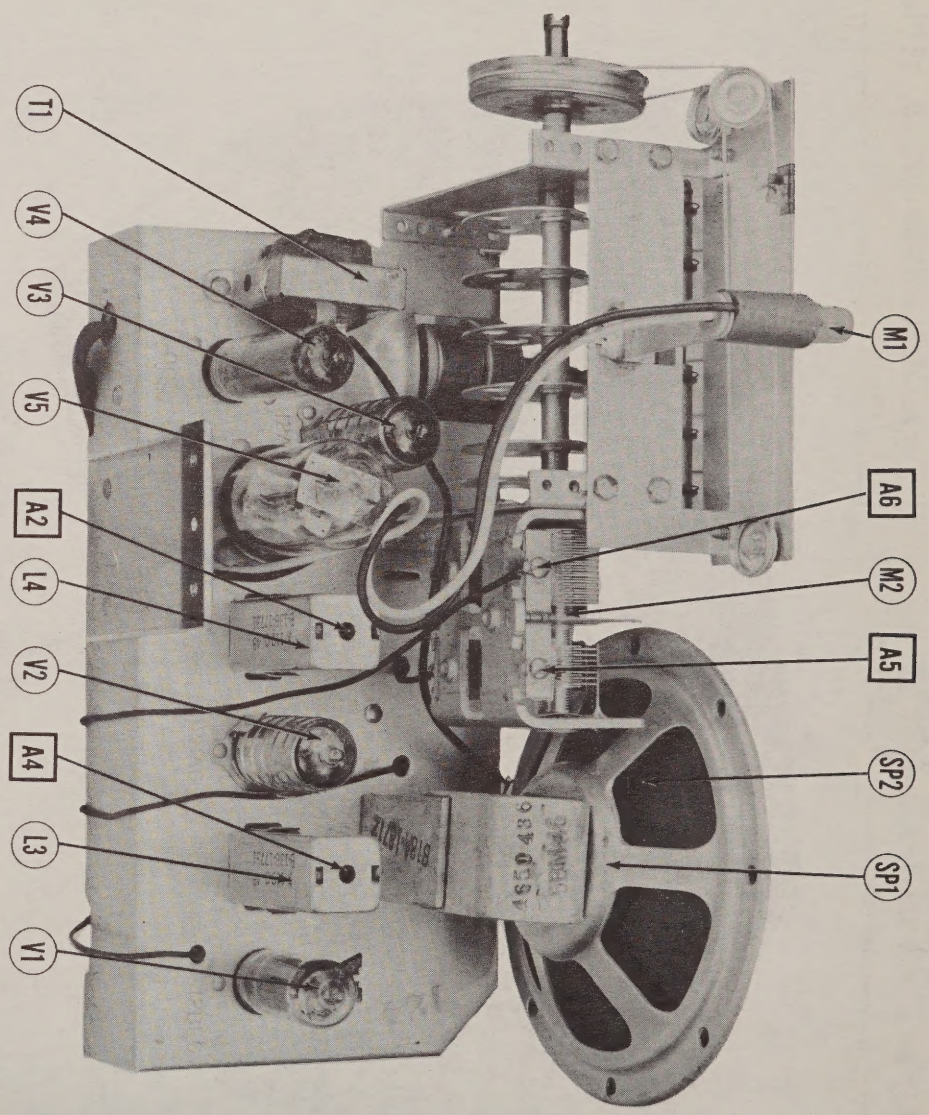
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R2	47KΩ	½	C-9B1-82	BTS-47K	Osc. Grid
R3	150Ω	½	C-9B1-52	BTS-150	IF Amp. Cathode
R4	2.2Meg	½	C-9B1-33	BTS-2.2Meg	AVC Network
R5	6.8Meg	½	C-9B1-36	BTS-6.8Meg	AF Amp. Grid
R6	330KΩ	½		BTS-330K	AF Amp. Plate - See Note 1
R7	470KΩ	½	C-9B1-29	BTS-470K	Output Grid
R8	150Ω	½	C-9B1-52	BTS-150	Output Cathode
R9	1000Ω	1	C-9B2-62	BTA-1000	Filter
C10	22Ω	½			Surge Limiter - See Note 2
R11	220KΩ	½	C-9B1-27	BTS-220K	Isolation

Note 1 Some models use 470KΩ resistor in this application.
Note 2 Some models use 33Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	3Ω	170Ω	.6Ω	B-12C-18723	B-3332 ①	A-3025	RO-2 ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIR LINE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	3Ω	A18A-18712	ST105 Model P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP2	5"	9/16"				

R F COILS

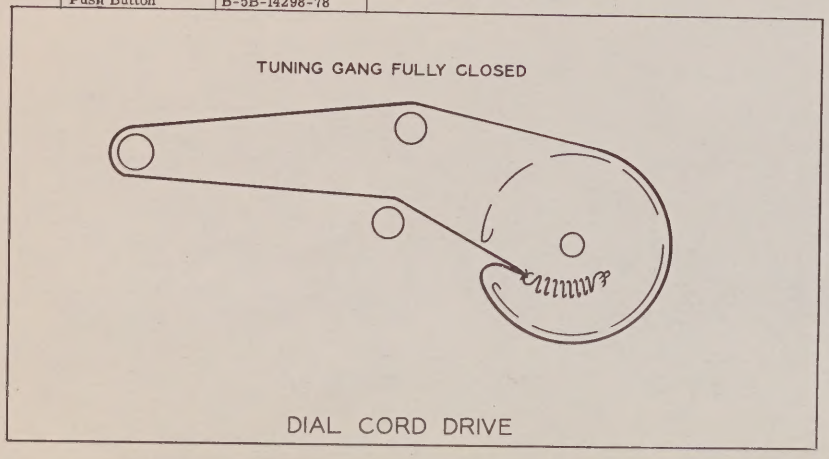
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: C AIR LINE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	Loop Ant.	2.3Ω		C-13E-18714		
L2	Osc. Coil	.9Ω	6.5Ω	B-12D-18741		
L3	1st. IF	17Ω	17Ω	B-13B-17731		
L4	2nd. IF	17Ω	17Ω	B-13B-17731		

DIAL LIGHTS

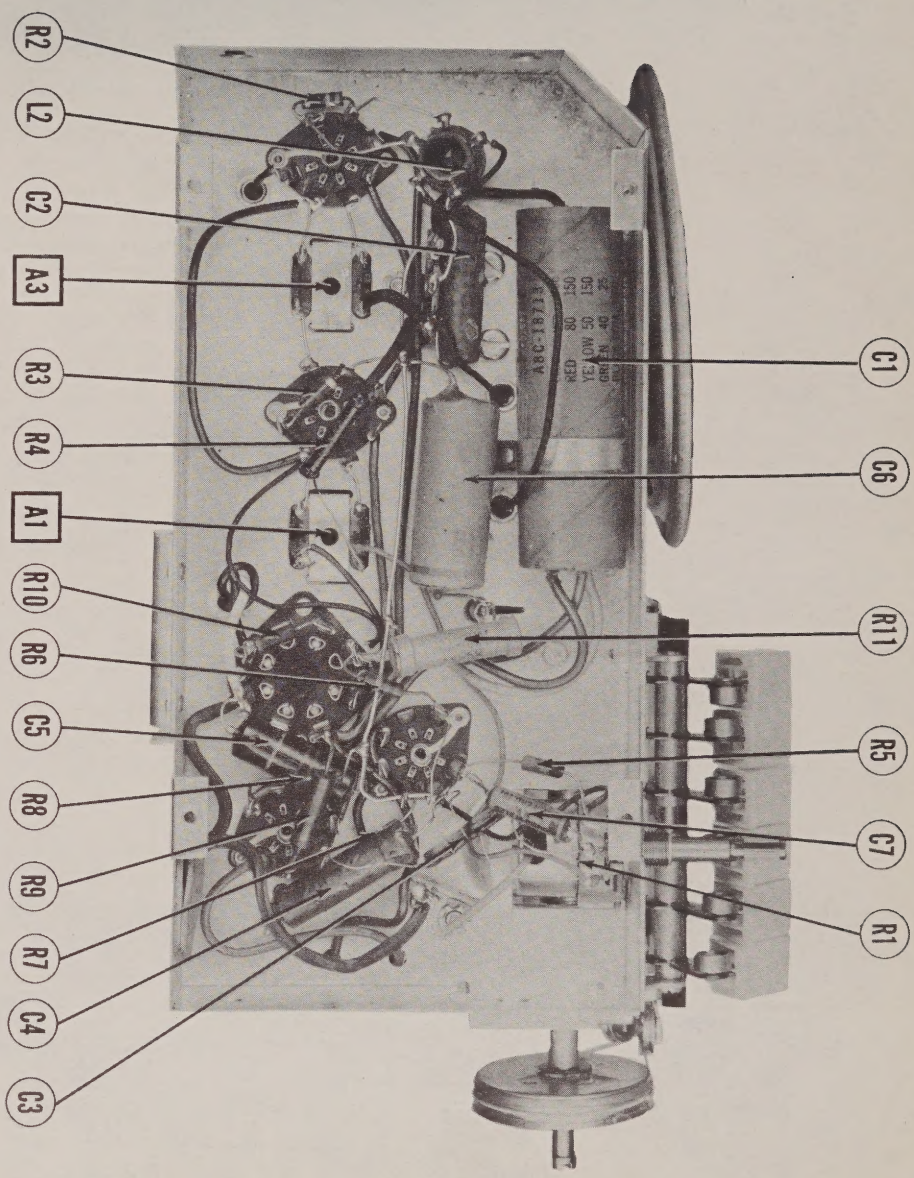
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIR LINE PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8	.15	Brown	A-46A-10793		Type # 47

MISCELLANEOUS

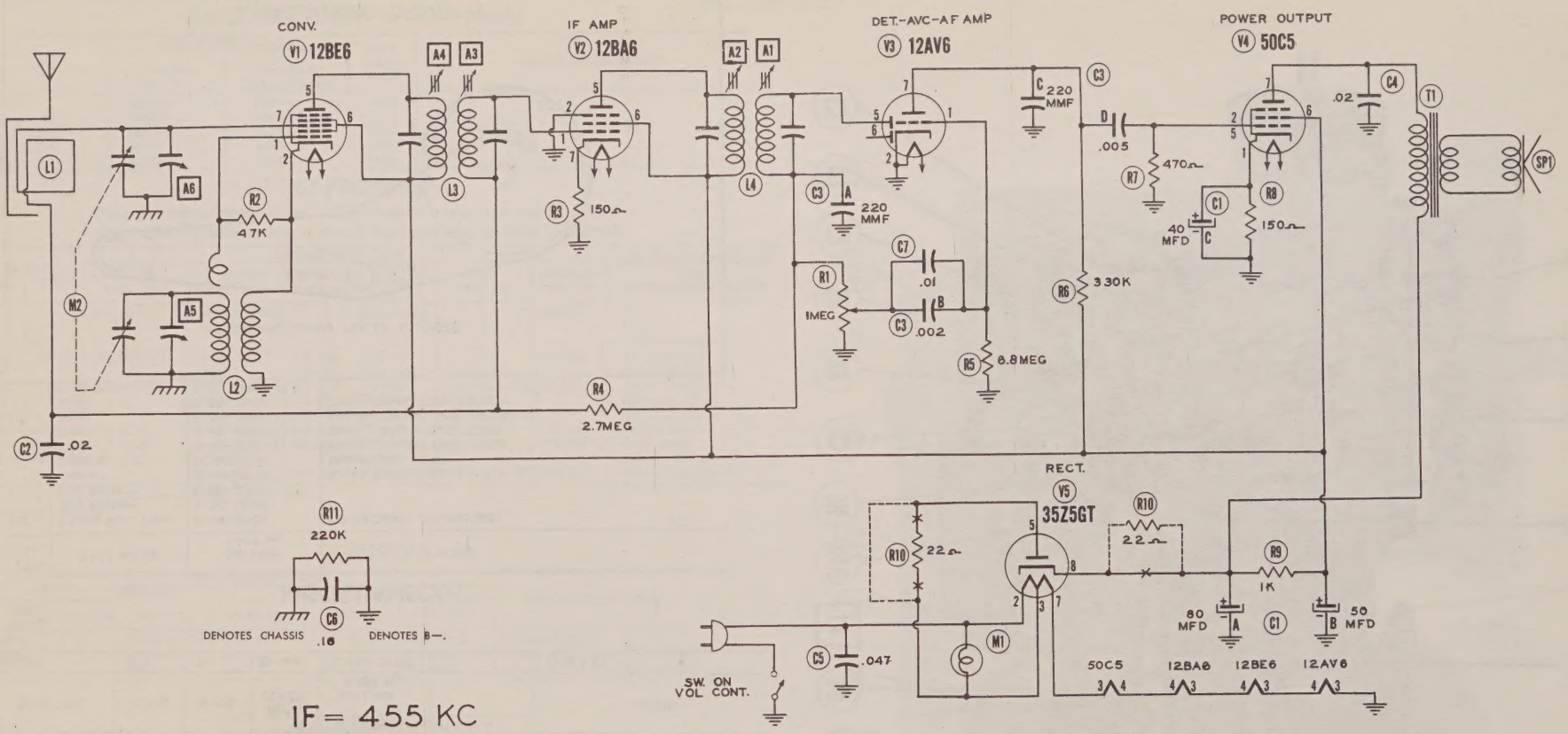
ITEM No.	PART NAME	AIR LINE PART No.	NOTES
M2	2 Gang Var. Cap.	B-8A-18708	(23-487MMF, 20-162MMF)
	Dial Pointer	A-2G-15449	
	Dial Scale	C-6D-15422	
	Cabinet	5C-14286-36	Model 15BR-1536B
	Cabinet	5C-14286-82	Model 15BR-1537B
	Knob	B-5B-18717-74	Volume, Model 15BR-1536B
	Knob	B-5B-10994-36	Tuning, Model 15BR-1536B
	Knob	B-5B-18717-78	Volume, Model 15BR-1537B
	Knob	B-5B-10994-77	Tuning Model 15BR-1537B
	Push Button	B-5B-14298-78	



CHASSIS—BOTTOM VIEW



AIR LINE MODEL 15BR-1536B



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	§-5.2VDC	0V	12VAC	24VAC	90VDC	90VDC	-.1VDC	
V 2	12BA6	-.1VDC	0V	24VAC	36VAC	90VDC	90VDC	-.8VDC	
V 3	12AV6	-.6VDC	0V	0V	12VAC	-.5VDC	-.5VDC	50VDC	
V 4	50C5	6.1VDC	0V	85VAC	36VAC	0V	90VDC	100VDC	
V 5	35Z5GT	0V	117VAC	110VAC	0V	105VAC	90VDC	85VAC	110VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	47KΩ	.9Ω	12Ω	24Ω	†1KΩ	†1KΩ	3.2Meg	
V 2	12BA6	3.2Meg	0Ω	24Ω	36Ω	†1KΩ	†1KΩ	150Ω	
V 3	12AV6	6.8Meg	0Ω	0Ω	12Ω	1Meg	Inf.	†330KΩ	
V 4	50C5	150Ω	470KΩ	86Ω	36Ω	470KΩ	†1KΩ	†170Ω	
V 5	35Z5GT	Inf.	121Ω	105Ω	Inf.	125Ω	†1KΩ	86Ω	130KΩ

† MEASURED FROM PIN 8 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AUTOMATIC
MODEL S-551

AUTOMATIC
MODEL S-551

TRADE NAME	Automatic, Model S-551
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Avenue, Boston, Mass.
TYPE SET	Battery Operated Custom-Built 1950-1951 Studebaker, Superheterodyne Receiver
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 Det.-AVC-AF, 6AQ5 Power Output, 6X4 Rectifier
POWER SUPPLY	6Volt Storage Battery RATING 5.5 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	538-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set the left hand edge of pointer carriage 2 3/8" from the edge of the chassis. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7, (grid), of 6BE6, (V2) Low side to chassis.	455KC (400~Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	100MMF	High side to antenna terminal. Low side to chassis.	1600KC	"	"	A5	"
3.	"	"	1400KC	Tune for maximum output.	"	A6, A7	"
4.	"	"	600KC	"	"	A8, A9	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AUTOMATIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	Det. -AVC-AF	6AT6	6AT6	7BT	
V5	Power Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AUTOMATIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	350	CE-86	AFH 3-107		UP2235C		TVL-3678	■ Filter
B	20	350							▲ Filter
C	20	25							Output Cathode
C2	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	RF Amp. Screen
C4	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C5	100		CC200	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	Osc. Grid Cap.
C6	220			SI220	D6-221	5W5T2	GP2K-221	5GA-T22	Diode RF Filter †
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling ‡
C8	220			SI220	D6-221	5W5T2	GP2K-221	5GA-T22	AF Amp. Plate †
C9	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C10	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Output Plate
C11	.008	1600	C205			PTE16D8		MB-D8	Buffer Cap.
C12	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter
C13	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter

† Some models use 220MMF in this application (Mfgrs. Part No. CC201).
‡ Some models use .002MFD in this application (Mfgrs. Part No. C203).

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUTOMATIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	750KΩ	½	RV-570	Q13-137	AG-79-Z		Volume Control
B	Shaft		Not Req.	Not req.	FS-3		Attach to R1A Per Instructions
C	Switch		Not Req.	76-1	SWB		Attach to R1A Per Instructions

RESISTORS

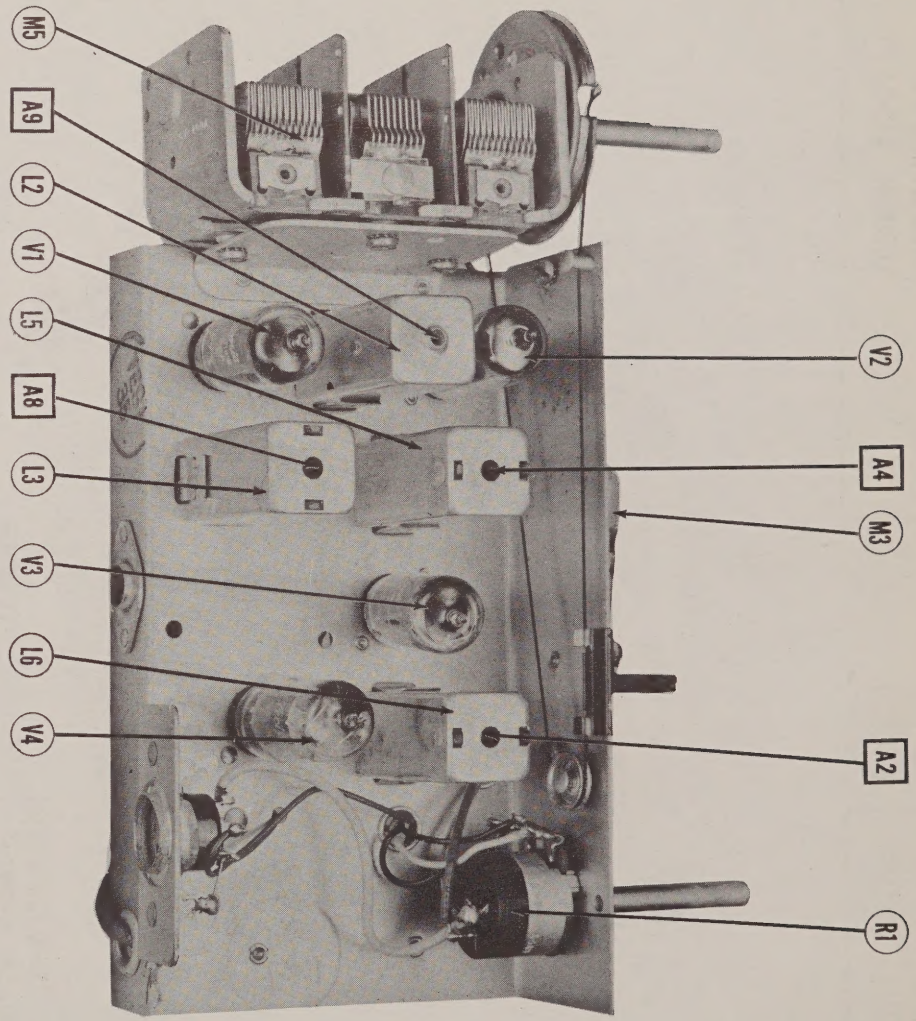
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUTOMATIC PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1Meg	½	R309	BTS-1Meg	RF Amp. Grid
R3	330Ω	½	R303	BTS-330	RF Amp. Cathode
R4	22KΩ	½	R306	BTS-22K	Osc. Grid
R5	1500Ω	½	R314	BTS-1500	IF Amp. Cathode
R6	22KΩ	2	R313	BTB-22K	Screen Dropping
R7	2Meg	½	R310	BTS-2.2Meg	AVC Network
R8	10Meg	½	R311	BTS-10Meg	AF Amp. Grid
R9	270KΩ	½	R307	BTS-270K	AF Amp. Plate
R10	680KΩ	½	R308	BTS-680K	Output Grid-See Note 1
R11	330Ω	½	R303	BTS-330	Output Cathode
R12	1000Ω	1	R312	BTA-1000	Filter
R13	68Ω	½	R301		Hash Suppressor-See Note 2
R14	68Ω	½	R301		Hash Suppressor-See Note 2

Note 1 Some models use 500KΩ resistor in this application.
Note 2 Some models use 100Ω resistor in this application.

TRANSFORMER (VIBRATOR)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AUTOMATIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3VDC @ 3A	425VCT .038ADC			TV-100 or 318V-2		P-2970	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AUTOMATIC	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T2	4.8KΩ	3.4Ω	260Ω	.7Ω	Part of SP1	A-3877	A-2930	RO-8	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AUTOMATIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD RES.	V. C. IMP.	PM-705	ST105 Mod. P5-X	5A1	
	PM	3.4Ω				
	CONE DIA.	V. C. DIA.				
SP2	5"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AUTOMATIC PART No.	MEISSNER PART No.	
L1	Ant. Hash Choke	1.3Ω		L200		
L2A	Ant. Coil	14Ω	5Ω	57FB-3		
B	Ant. Coil			15053		Alternate
L3A	RF Coil	100Ω	7.5Ω	57FB-4		
B	RF Coil			15054		Alternate
L4	Osc. Coil	9Ω	.9Ω	L201		
L5A	1st IF	19Ω	19Ω	1655-16		
B	1st IF			14977		Alternate
L6A	2nd IF	19Ω	19Ω	1655-16		
B	2nd IF			14977		Alternate
L7	Hash Choke	.1Ω		L202		
L8	Hash Choke	0Ω		L203		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				Automatic PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	Int.	6.3 VDC	60~	V-83	5301	5301	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			AUTOMATIC PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	15A	A201	A300	311015	155020	

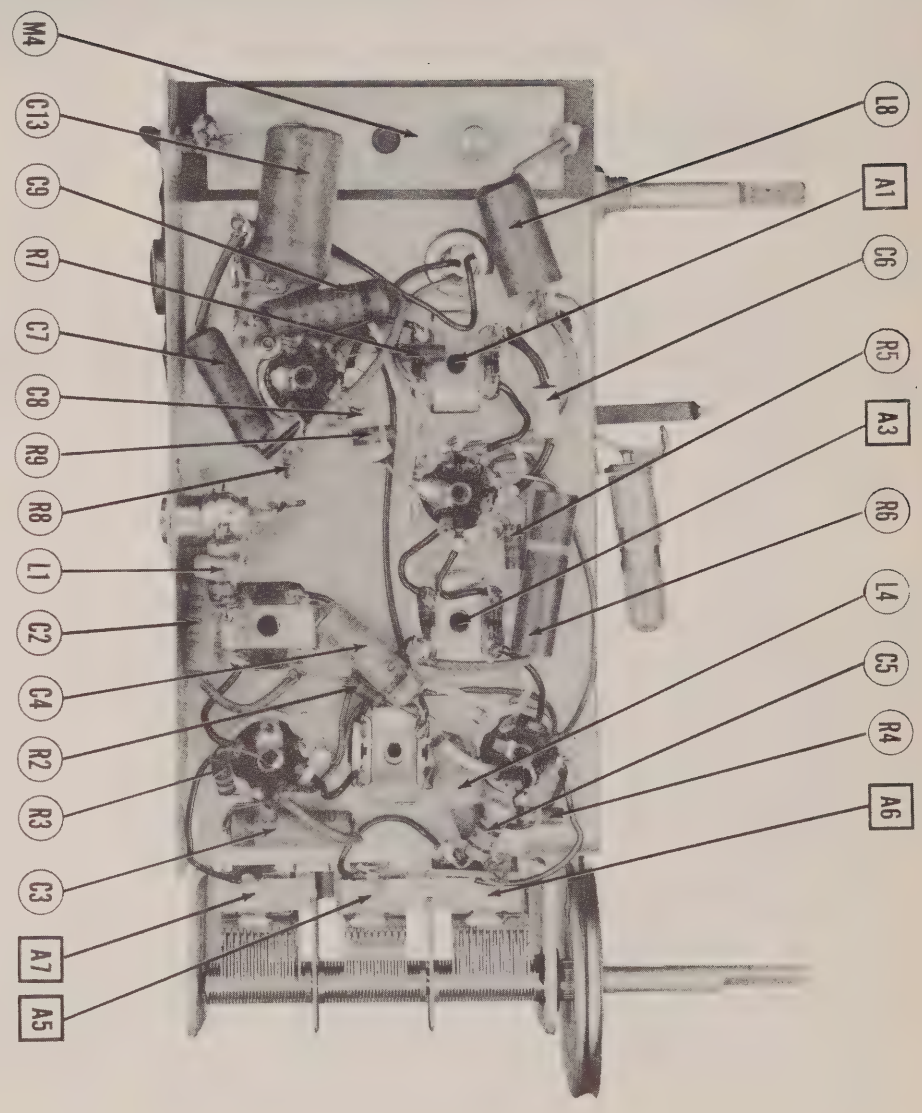
DIAL LIGHTS

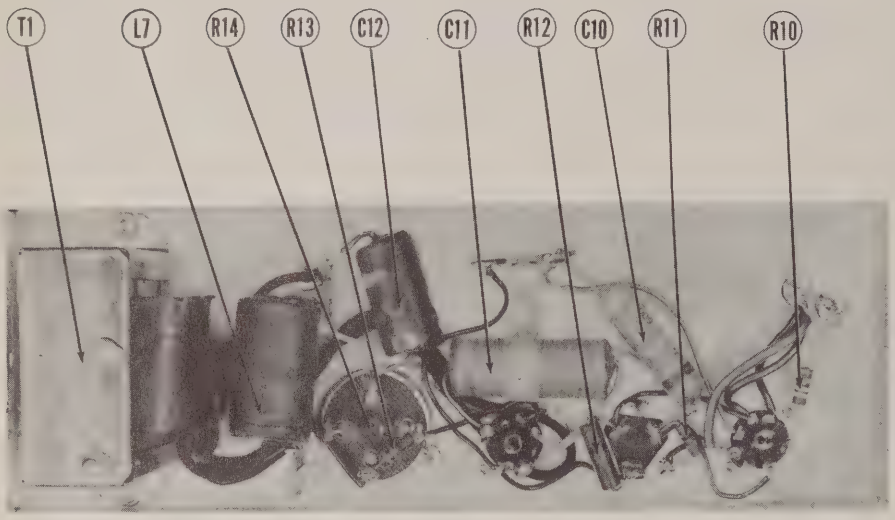
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AUTOMATIC PART No.		
M3	Bayonet	6-8	.15	Brown	T47		Type number 47.

MISCELLANEOUS

ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
M4	Spark Plate		
M5	3 Gang Var. Cap.	CV-400	(25-397MMF, 27-386MMF, 24-201MMF)
	Knob	H310	
	Dial Pointer	PS100	

CHASSIS—BOTTOM VIEW

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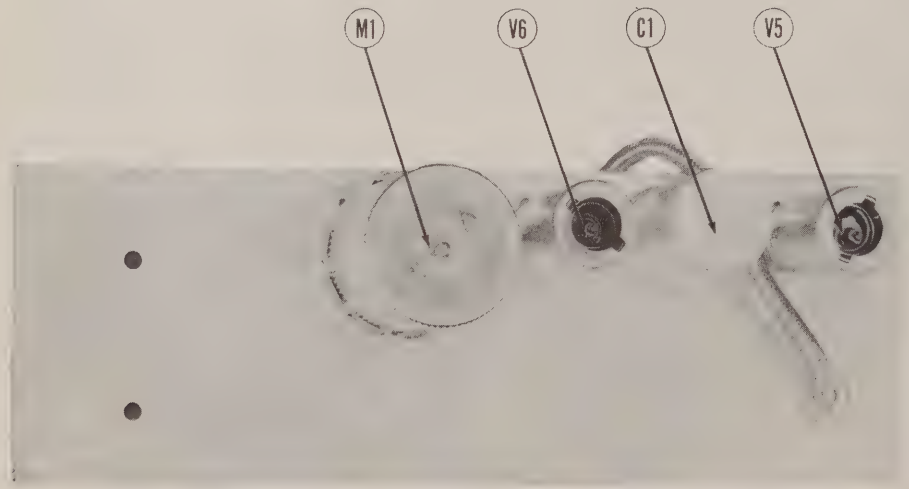
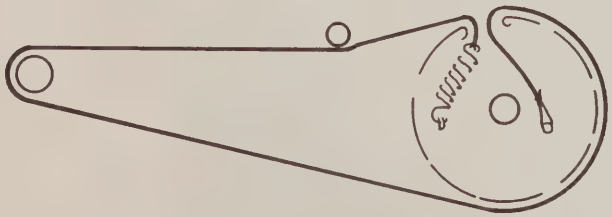
R13
C12
C11
R12
C10
R11
R10


M1
V6
C1
V5

TUNING GANG FULLY CLOSED



DIAL CORD DRIVE

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	-.2VDC	0V	0V	6.2VDC	195VDC	75VDC	1.5VDC
V 2	6BE6	§-5.4VDC	0V	0V	6.2VDC	195VDC	75VDC	-.5VDC
V 3	6BA6	0V	0V	0V	6.2VDC	195VDC	75VDC	3.3VDC
V 4	6AT6	-.7VDC	0V	0V	6.2VDC	-.3VDC	-.3VDC	75VDC
V 5	6AQ5	0V	11VDC	0V	6.2VDC	205VDC	195VDC	0V
V 6	6X4	285VAC	0V	0V	6.2VDC	0V	285VAC	210VDC

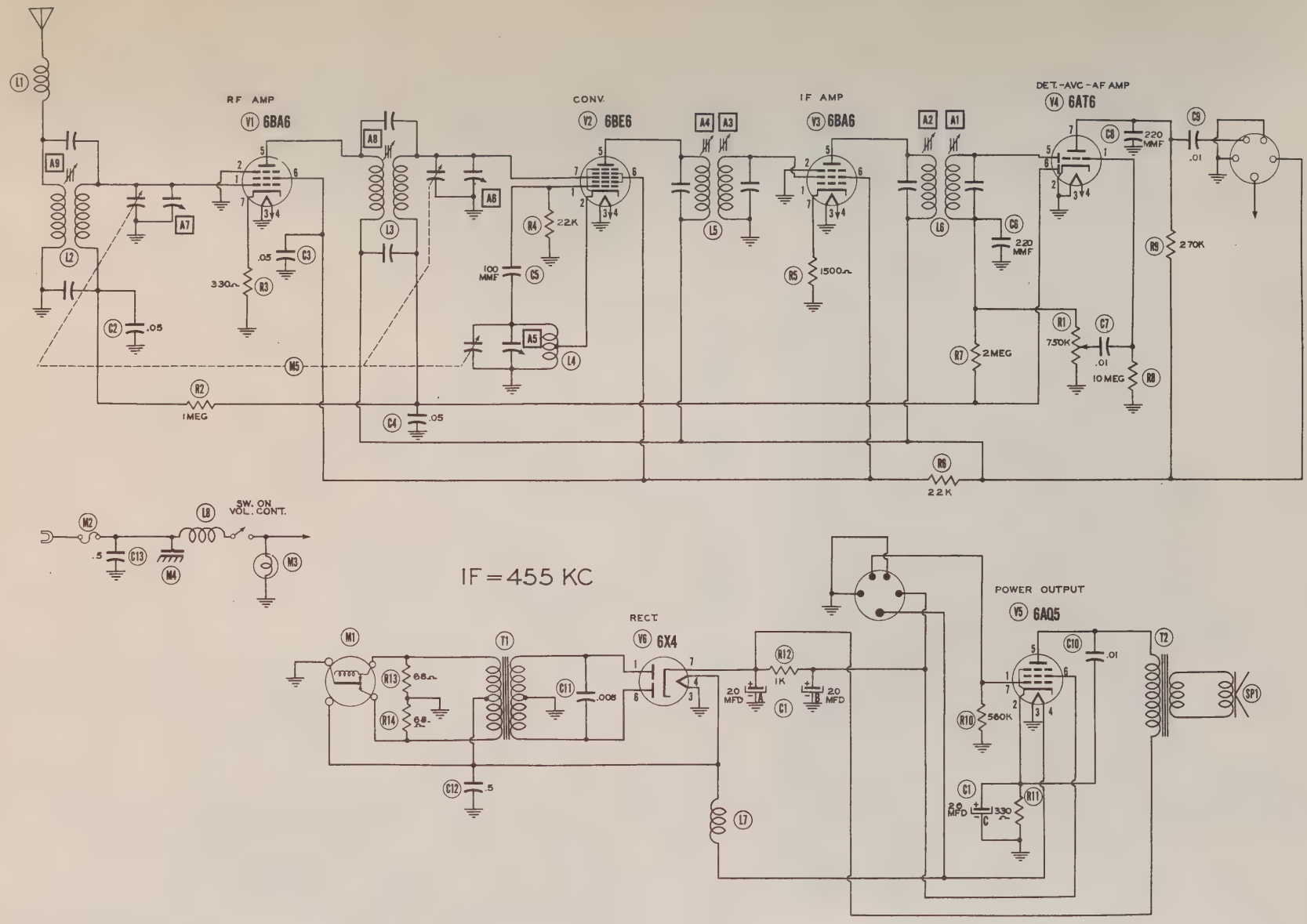
§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	3.7Meg	0Ω	0Ω	.5Ω	†1KΩ	†23KΩ	330Ω
V 2	6BE6	20KΩ	.9Ω	0Ω	.5Ω	†1KΩ	†23KΩ	2.7Meg
V 3	6BA6	19Ω	0Ω	0Ω	.5Ω	†1KΩ	†23KΩ	1.5KΩ
V 4	6AT6	10Meg	0Ω	0Ω	.5Ω	750KΩ	2.7Meg	†270KΩ
V 5	6AQ5	680K	330Ω	0Ω	.5Ω	†260Ω	†1KΩ	680K
V 6	6X4	250Ω	Inf.	0Ω	.5Ω	Inf.	270Ω	50KΩ

† MEASURED FROM PIN 7 OF V6.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



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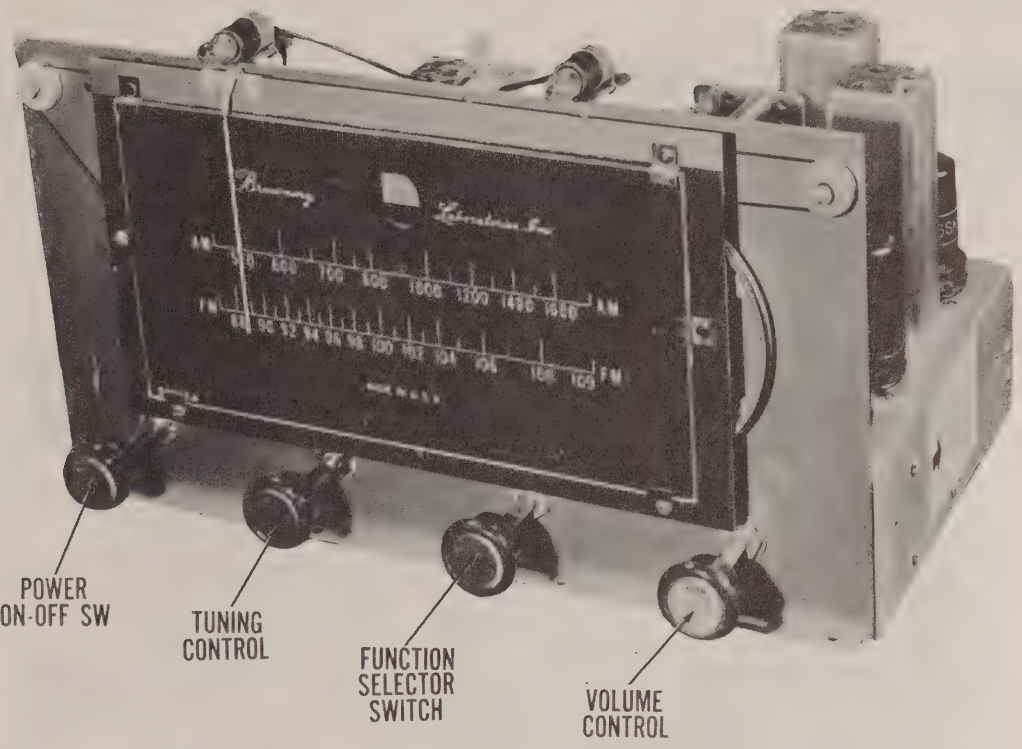
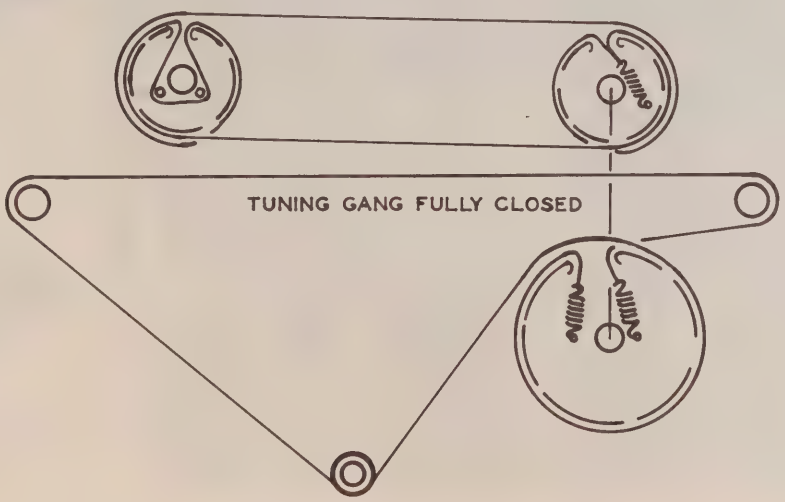
BROWNING MODEL RJ-12B

BROWNING MODEL RJ-12B



BROWNING MODEL RJ-12B

TRADE NAME	Browning, Model RJ-12B
MANUFACTURER	Browning Laboratories Inc., Winchester, Mass.
TYPE SET	AM-FM Superheterodyne Tuner
TUBES (TWELVE)	Types 6AU6 FM RF Amp., 7F8 Converter, 6AU6 1st FM IF Amp., 6AU6 2nd FM IF Amp., 6SJ7 1st FM Limiter, 6SJ7 2nd FM Limiter, 6H6 FM Discriminator, 6J6 AFC, 6SG7 AM RF Amp., 6SA7 Converter, 6SK7 AM IF Amp., 6AL7GT Tuning Indicator
POWER SUPPLY	Model PF-12 (See Set 47 Folder 4)
TUNING RANGE--BROADCAST	540-1650KC FREQ. MOD. 88-108MC



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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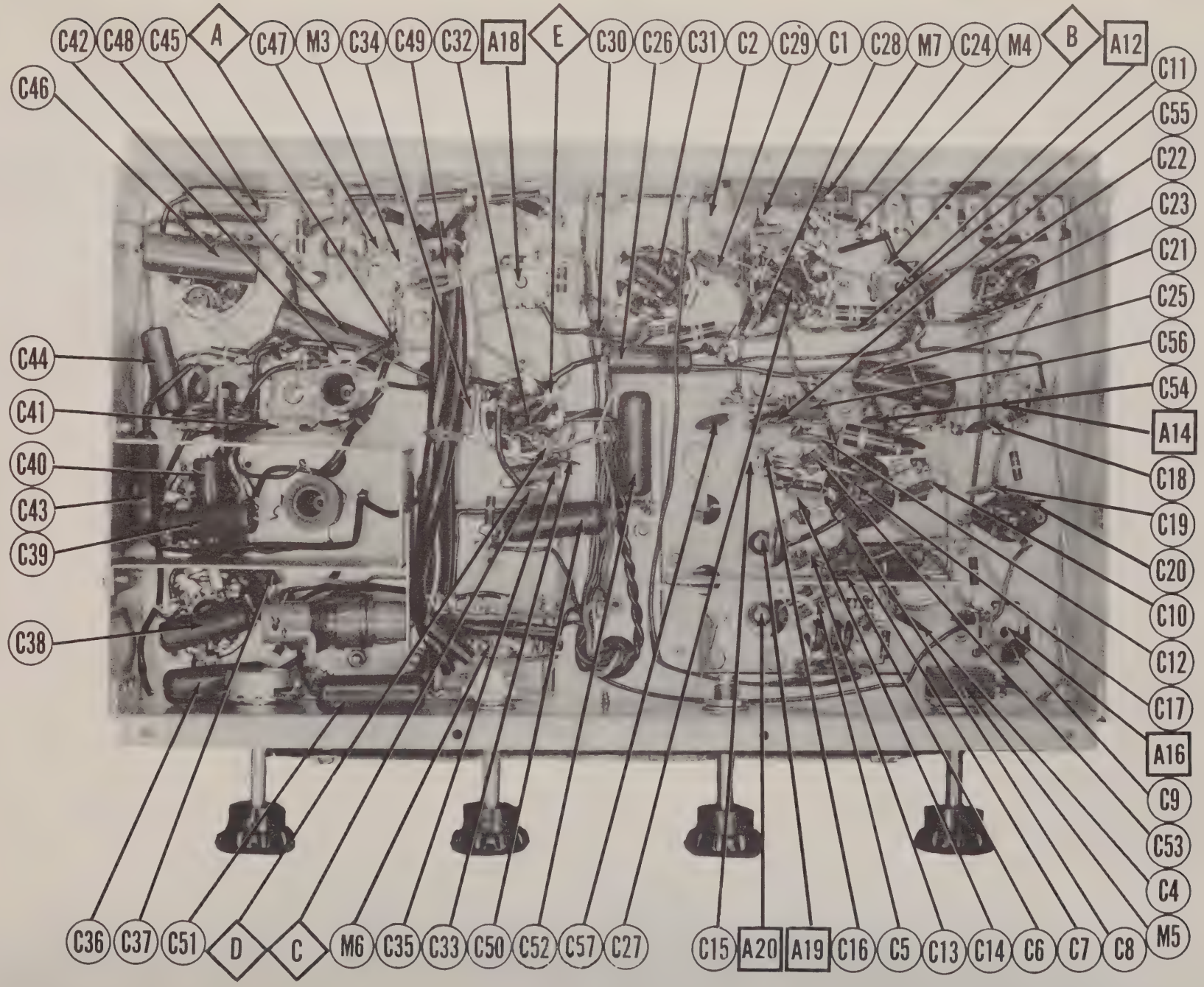
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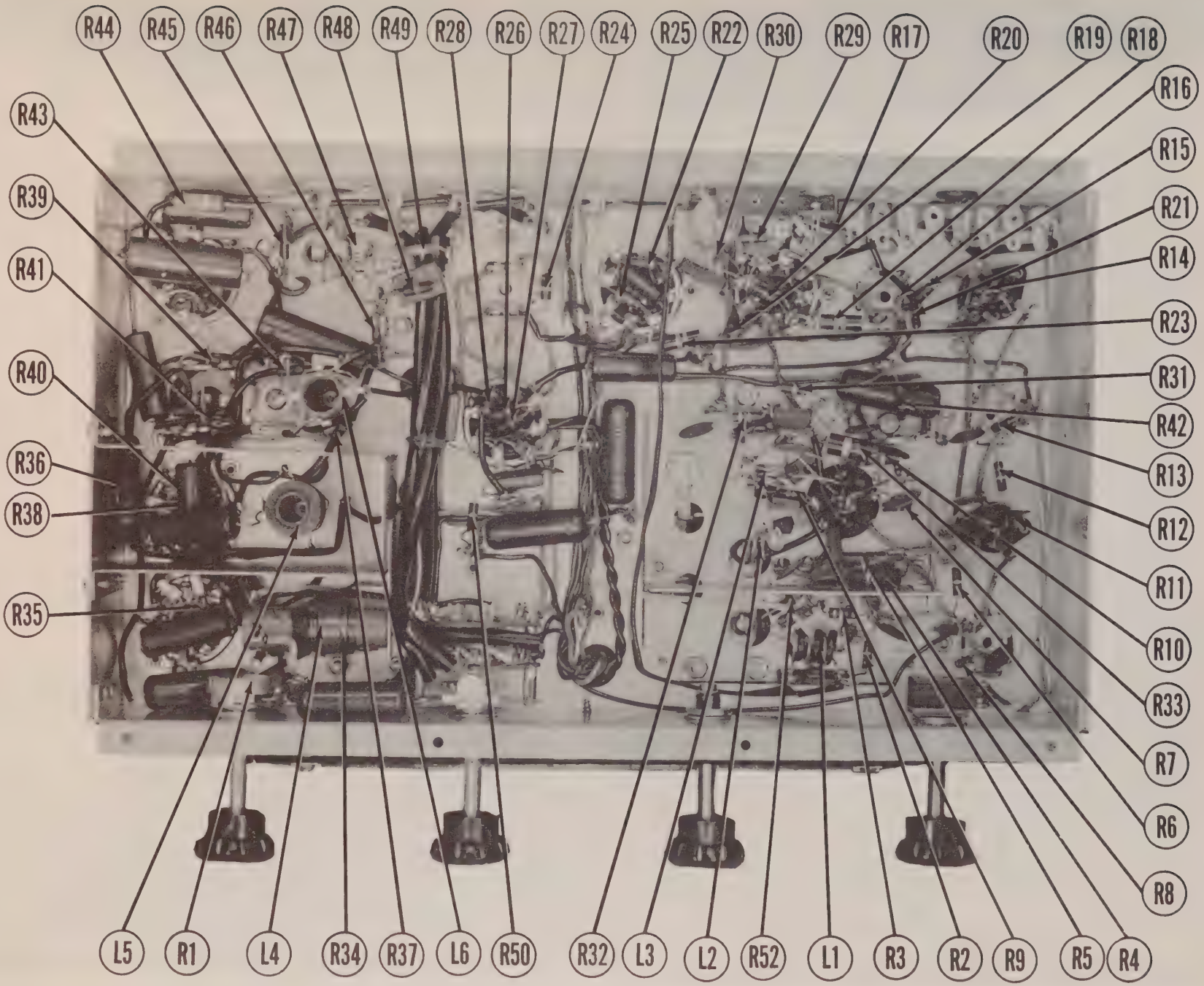
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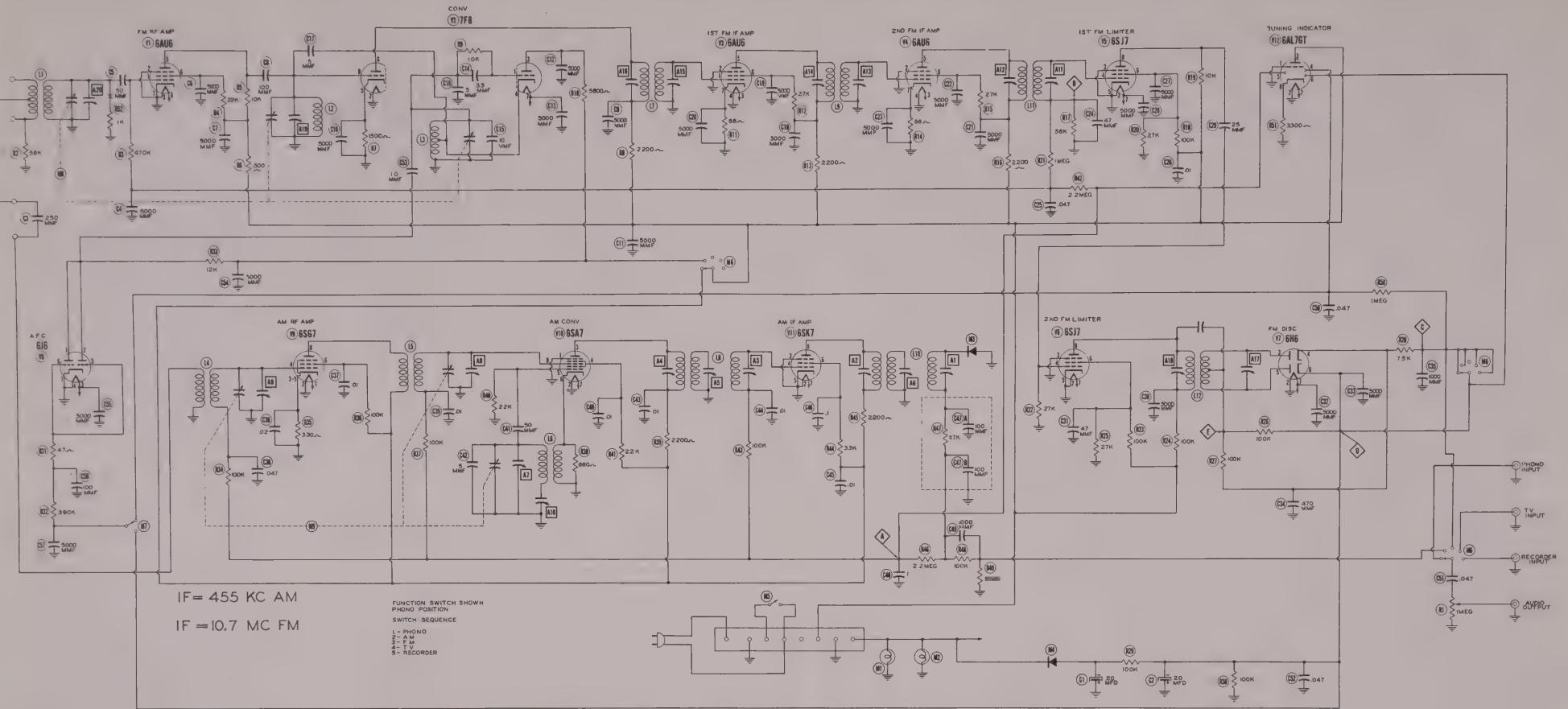
R43



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6AU6	- .6VDC	0V	0V	6.3VAC	125VDC	145VDC	0V	
V 2	TF8	93.5VDC	0V	9185VDC	0V	5.5VDC	230VDC	6.3VAC	0V
V 3	6AU6	0V	0V	6.3VAC	0V	210VDC	120VDC	8VDC	
V 4	6AU6	0V	0V	6.3VAC	0V	210VDC	120VDC	8VDC	
V 5	6SJ7	0V	0V	0V	- .5VDC	0V	[illegible]	6.3VAC	225VDC
V 6	6SJ7	0V	0V	0V	-.1VDC	0V	225VDC	6.3VAC	95VDC
V 7	6H6	0V	0V	-3 .7VDC	-2.2VDC	-3 .8VDC	-3.8VDC	6.3VAC	3.5VDC
V 8	6J6	9180VDC	9180VDC	6.3VAC	0V	- .8VDC	-.8VDC	0V	
V 9	6SG7	0V	0V	1VDC	- .8VDC	1VDC	120VDC	6.3VAC	+230VDC
V 10	6SA7	0V	0V	250VDC	70VDC	† -2VDC	0V	6.3VAC	+ - 5VDC
V 11	6SK7	0V	0V	0V	- .6VDC	0V	110VDC	6.3VAC	+200VDC
V 12	6AL7GT	0V	0V	280VDC	- .7VDC	-2.1VDC	-3.5VDC	6.3VAC	8VDC

† MEASURED IN F M POSITION
‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6AU6	1.5Meg	0Ω	0Ω	2Ω	110KΩ	123KΩ	0Ω	
V 2	TF8	.08KΩ	0Ω	115.6KΩ	0Ω	1.5KΩ	12.2KΩ	2Ω	0Ω
V 3	6AU6	1.3Ω	0Ω	2Ω	0Ω	12.2KΩ	128KΩ	68Ω	
V 4	6AU6	1.3Ω	0Ω	2Ω	0Ω	12.2KΩ	128KΩ	68Ω	
V 5	6SJ7	0Ω	0Ω	0Ω	56KΩ	0Ω	155KΩ	2Ω	110KΩ
V 6	6SJ7	3Ω	0Ω	0Ω	27KΩ 110KΩ	0Ω 85KΩ	160KΩ 58KΩ	2Ω	110KΩ 58KΩ
V 7	6H6	8Ω	0Ω	110KΩ	120KΩ	110KΩ	120KΩ	2Ω	85KΩ
V 8	6J6	111KΩ	111KΩ	2Ω	0Ω	400KΩ	490KΩ	0Ω	
V 9	6SG7	0Ω	0Ω	330Ω	1.4Meg	330Ω	1100KΩ	2Ω	110Ω
V 10	6SA7	0Ω	0Ω	12.2KΩ	122KΩ	[illegible]	2.4Ω	2Ω	1.5Meg
V 11	6SK7	0Ω	0Ω	[illegible]	1.5Meg (1.1Meg	[illegible]	135KΩ	2Ω	12.2KΩ
V 12	6AL7GT	0Ω	[illegible]	100	11.3Meg 1.4Meg	1.4Meg	50KΩ	2Ω	3.3KΩ

† MEASURED IN F M POSITION.
‡ MEASURED FROM INPUT OF B+ LINE.

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		BROWNING PART No.	STANDARD REPLACEMENT		
V1	FM RF Amplifier	6AU6	6AU6	7BK	
V2	Converter	7F8	7F8	8BW	
V3	1st FM IF Amp.	6AU6	6AU6	7BK	
V4	2nd FM IF Amp.	6AU6	6AU6	7BK	
V5	1st FM Limiter	6SJ7	6SJ7	8N	
V6	2nd FM Limiter	6SJ7	6SJ7	8N	
V7	FM Discriminator	6H6	6H6	7Q	
V8	AFC	6J6	6J6	7BF	
V9	AM RF Amplifier	6SG7	6SG7	8BK	
V10	AM Converter	6SA7	6SA7	8R	
V11	AM IF Amplifier	6SK7	6SK7	8N	
V12	Tuning Indicator	6AL7GT	6AL7GT	8CH	

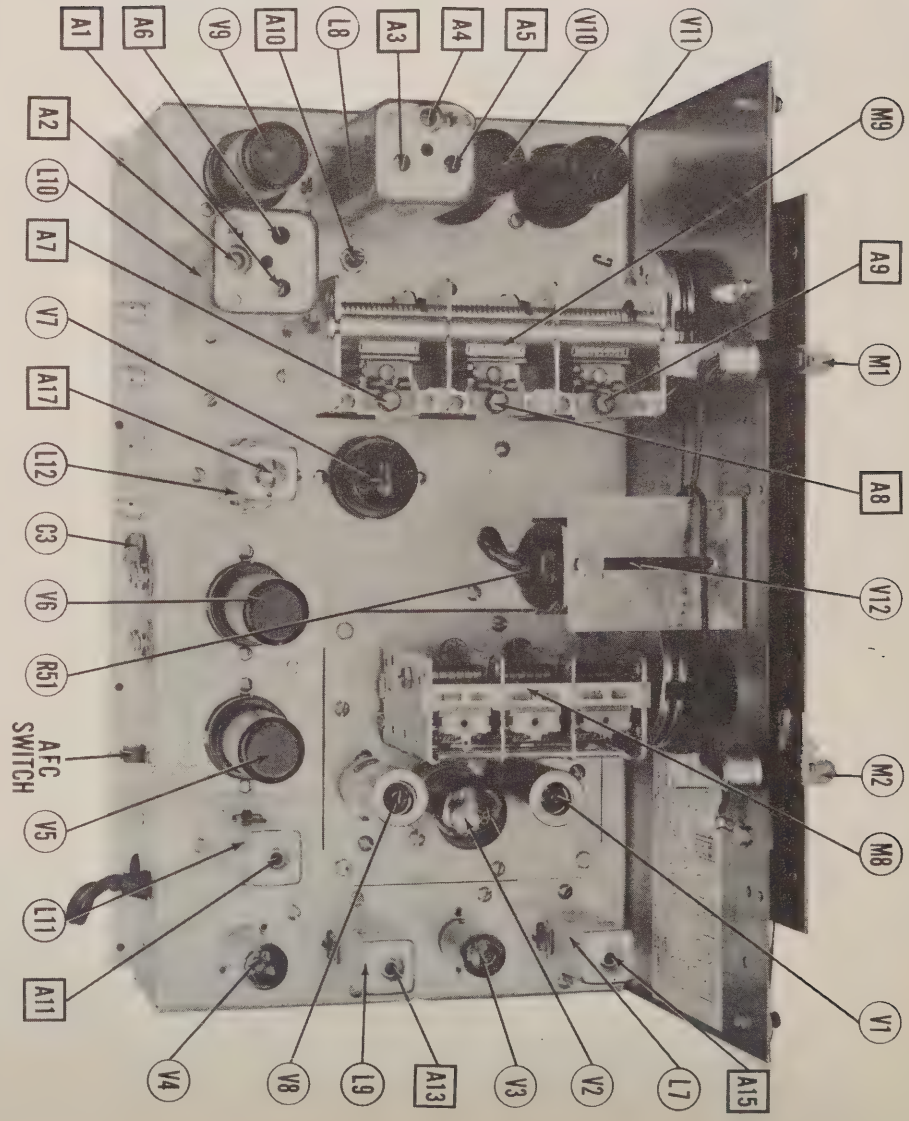
CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	BROWNING PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	20	25		PRS25/25		BR202A		TVA-1205	Bias Filter †
C2	20	25		PRS25/25		BR202A		TVA-1205	Bias Filter †
C3	250	500		1468-00025	D6-251	5W5T25	GP2K-251	1FM-325	RF Coupling
C4	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	AVC Filter
C5	50	500		1468-00005	D6-500	5W5Q5	GP1K-500	1FM-45	RF Coupling
C6	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Amp. Screen
C7	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C8	100	500		1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	RF Coupling
C9	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	Mixer Plate Dec.
C10	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	Mixer Cathode
C11	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C12	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	FM Osc. Anode
C13	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	FM Osc. Filter
C14	33	500					N220K-100		FM Osc. Grid Cap.
C15	10						N750K-050		Fixed Trimmer
C16	5			SI5N750			N750K-050		Fixed Trimmer
C17	5			SI5NPO			NPOK-050		FM Osc. Coupling
C18	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st FM IF Amp. Plate
C19	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st FM IF Amp. Screen
C20	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st FM IF Amp. Cathode
C21	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd FM IF Amp. Plate
C22	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd FM IF Amp. Screen
C23	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd FM IF Amp. Cathode
C24	47	500		1469-00005	D6-470	5R5Q5	GP1K-470	MS-45	AVC Filter
C25	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	AVC Filter
C26	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Bypass
C27	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st Limiter Screen
C28	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st Limiter Fil.
C29	25	500		1468-000025	D6-250	5W5Q25	GP1K-250	MS-421	IF Coupling
C30	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd Limiter Plate
C31	47	500		1469-00005	D6-470	5R5Q5	GP1K-470	MS-45	2nd Limiter Screen
C32	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	Disc. Fil.
C33	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C34	470	500		1469-0005	D6-471	5R5T5	GP2K-471	MS-35	RF Bypass
C35	1000	500		1468-001	D6-102	1W5D1	GP2L-102	1FM-21	De-Emphasis
C36	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	AVC Filter
C37	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AM RF Amp. Screen
C38	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	AM RF Amp. Cathode
C39	.01	600		P688-01	D6-104	PTE6S1	GP2-333-103	6TM-S1	AVC Filter
C40	.01	600		P688-01	D6-104	PTE6S1	GP2-333-103	6TM-S1	AM Osc. Anode
C41	50						N750K-500		AM Osc. Grid Cap.
C42	5			SI5N750			N750K-050		Fixed Trimmer
C43	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Conv. Plate Dec.
C44	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AVC Filter
C45	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AM IF Amp. Plate
C46	.1	400		P488-1	DF-104	PTE4P1		4TM-P1	AM IF Amp. Screen

SET 146 FOLDER 4

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA BROWNING PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C47A	100			SI100	♦PC-50	5W5T1	GP1K-101	♦100C1	Det. RF Filter
■	100			SI100		5W5T1	GP1K-101		Det. RF Filter
C48	.1	400		P488-1	DF-104	PTE4P1		4TM-P1	AVC Filter
C49	1000	500		1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Audio Coupling
C50	.047	600		P688-047	DF-502	PTE6S5		6TM-S47	Tuning Ind. Filter
C51	.047	600		P688-047	DF-502	PTE6S5		6TM-S47	Audio Coupling
C52	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	RF Bypass
C53	10	500		1468-00001	D6-100	5W5Q1	GP1K-100	MS-41	AFC Coupling
C54	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	AFC Decoupling
C55	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	AFC Filter
C56	100	500		1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	AFC Filter
C57	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	AFC Filter

† Some models use 10MFD in this application.
■ Items C47A, C47B, R47 are combined into one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BROWNING PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½		Q13-137	AG-63-Z	B-70	Volume Control
B	Shaft			Not Req.	RS-2	Not Req.	Attach to R1A Per Instructions.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BROWNING PART No.	IRC PART No.	IDENTIFICATION CODES
R2	56KΩ	½		BTS-56K	Antenna Loading
R3	470KΩ	½		BTS-470K	FM RF Amp. Grid
R4	22KΩ	1		BTA-22K	FM RF Amp. Screen
R5	10KΩ	1		BTA-10K	FM RF Amp. Plate
R6	1500Ω	½		BTS-1500	FM RF Amp. Decoupling
R7	1500Ω	½		BTS-1500	FM Mixer Cathode
R8	2200Ω	½		BTS-2200	FM Mixer Plate Decoupling
R9	10KΩ	½		BTS-10K	FM Osc. Grid
R10	5600Ω	1		BTA-5600	FM Osc. Plate
R11	68Ω	½			1st FM IF Amp. Cathode
R12	27KΩ	½		BTS-27K	1st FM IF Amp. Screen
R13	2200Ω	½		BTS-2200	1st FM IF Amp. Decoupling
R14	68Ω	½			2nd FM IF Amp. Cathode
R15	27KΩ	½		BTS-27K	2nd FM IF Amp. Screen
R16	2200Ω	½		BTS-2200	2nd FM IF Amp. Decoupling
R17	56KΩ	½		BTS-56K	1st FM Limiter Grid
R18	100KΩ	1		BTA-100K	1st FM Limiter Screen
R19	10KΩ	½		BTS-10K	1st FM Limiter Plate
R20	27KΩ	½		BTS-27K	Voltage Divider
R21	1Meg	½		BTS-1Meg	AVC Network
R22	27KΩ	½		BTS-27K	2nd FM Limiter Grid
R23	100KΩ	1		BTA-100K	2nd FM Limiter Screen
R24	100KΩ	½		BTS-100K	2nd FM Limiter Plate Decoupling
R25	27KΩ	½		BTS-27K	Voltage Divider
R26	100KΩ	½		BTS-100K	Disc Diode Load
R27	100KΩ	½		BTS-100K	Disc Diode Load
R28	75KΩ	½			De-Emphasis
R29	100KΩ	½		BTS-100K	Bias Network
R30	100KΩ	½		BTS-100K	Bias Network
R31	47Ω	½			Parasitic Suppressor
R32	390KΩ	½		BTS-390K	AFC Grid
R33	12KΩ	2		BTB-12K	AFC Plate
R34	100KΩ	½		BTS-100K	AM RF Amp. Grid
R35	330Ω	½		BTS-330	AM RF Amp. Cathode
R36	100KΩ	½		BTS-100K	AM RF Amp. Screen

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BROWNING PART No.	IRC PART No.	IDENTIFICATION CODES
R37	100KΩ	½		BTS-100K	AM Conv. Grid
R38	680Ω	½		BTS-680	AM Conv. Cathode-See Note 1
R39	2200Ω	½		BTS-2200	AM Conv. Plate Decoupling
R40	22KΩ	½		BTS-22K	AM Osc. Grid
R41	22KΩ	1		BTA-22K	AM Osc. Anode
R42	2.2Meg	½		BTS-2.2Meg	AVC Network
R43	100KΩ	½		BTS-100K	AM IF Amp. Grid
R44	33KΩ	1		BTA-33K	AM IF Amp. Screen
R45	2200Ω	½		BTS-2200	AM IF Amp. Decoupling
R46	2.2Meg	½		BTS-2.2Meg	AVC Network
R47	47KΩ	½	♦	BTS-47K	Diode Filter
R48	100KΩ	½		BTS-100K	Diode Load
R49	390KΩ	½		BTS-390K	Diode Load
R50	1Meg	½		BTS-1Meg	Tuning Indicator Network
R51	3300Ω	½		BTS-3300	Tuning Indicator Cathode
R52	1000Ω	½		BTS-1000	FM Antenna Coil Shunt-See Note 2

♦ Items R47, C47A, and C47B are combined into one unit
Note 1 Some models use 1000Ω resistor in this application.
Note 2 Not used in all models.

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA BROWNING PART No.	REPLACEMENT DATA MEISSNER PART No.	
L1	FM Ant. Coil	0Ω	0Ω			
L2	FM RF Coil	0Ω				
L3	FM Osc. Coil	0Ω				
L4	AM Ant. Coil	5.3Ω	4Ω			
L5	AM RF Coil	100Ω	3.8Ω			
L6	AM Osc. Coil	2.3Ω	10Ω			
L7	1st FM IF	1.3Ω	1.3Ω			
L8	1st AM IF	20Ω	18Ω			
L9	2nd FM IF	1.3Ω	1.3Ω			
L10	2nd AM IF	17Ω	17Ω			
L11	3rd FM IF	1.3Ω	1.3Ω			
L12	Disc. Trans.	1.3Ω	1.5Ω			Tap ⓐ .7Ω

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA BROWNING PART No.		NOTES
M1	Bayonet	6-8	.15	Brown			Type number 47.
M2	Bayonet	6-8	.15	Brown			Type number 47.

MISCELLANEOUS

ITEM No.	PART NAME	BROWNING PART No.	NOTES
M3	Crystal		1N54 (AM Detector)
M4	Crystal		1N54 (Bias)
M5	Switch		On-Off
M6	Switch		Function
M7	Switch		AFC
M8	AM Tuning Gang		(21-397MMF, 21-397MMF, 21-397MMF)
M9	FM Tuning Gang		(16-34MMF, 16-34MMF, 16-34MMF)

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
An external power supply and sudio amplifier is required to operate this tuner.

AM ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to stator on center section of "AM" tuning gang. Low side to chassis.	455KC (Unmod.)	AM (Second pos. clockwise)	Tuning gang fully open.	DC probe to point (A). Common to chassis.	A1,A2, A3, A4, A5, A6	Adjust in the order given for maximum deflection. Attenuate signal generator to keep VTVM reading between 3 and 5 volts.
2.	Turn signal generator to 453KC and note VTVM reading, then turn signal generator to 457KC and note reading. If the readings are not approximately the same repeat step 1.							
3.	50MMF	High side to "AM" Ant. terminal. Low side to chassis.	1300KC	"	1300KC	"	A7	Adjust for maximum deflection.
4.	"	"	1400KC	"	1400KC	"	A8, A9	"
5.	"	"	600KC	"	600KC	"	A10	Rock signal generator frequency while adjusting A10 for maximum deflection.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Turn the AFC switch to "Off."

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD	High side to pin 1, (grid) of 6AU6, (V3). Low side to chassis.	10.7MC (Unmod.)	FM	Tuning gang fully open.	DC probe to point (B). Common to chassis.	A11, A12 A13, A14	Adjust for maximum deflection. Attenuate signal generator to maintain 3 to 5 volt reading.
7.	"	High side to stator on center section of "FM" tuning gang. Low side to chassis.	"	"	"	"	A15, A16	Adjust for maximum deflection. Check to see that the VTVM reading is essentially the same 50KC above and below 10.7MC. If not repeat steps 6 and 7.
8.	"	"	"	"	"	DC probe to point (C). Common to point (D).	A17	Adjust for zero reading. A positive and negative reading will b be obtained on either side of the correct setting.
9.	"	"	"	"	"	DC probe to point (E). Common to Point (D).	A18	Adjust for maximum deflection. Recheck step 8. If necessary repeat steps 8 and 9.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Turn the AFC switch to "Off."
Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
6.	.01MFD	High side to pin 1, (grid) of 6AU6, (V3). Low side to chassis.	10.7MC (450KC SWP)	FM (third pos. clockwise)	Point of noninterference.	Vert. Amp. thru 22KΩ to point (B). Low side to chassis.	A11, A12 A13, A14	Adjust for maximum amplitude and symmetry as per fig. 1.
7.	"	High side to stator on center section of "FM" tuning gang. Low side to chassis.	"	"	"	"	A15, A16	"
8.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A17, A18	Adjust A17 so 10.7MC occurs at center of coossover lines as per fig. 2. Adjust A18 for maximum amplitude and straightness of crossover lines. Continue with step 10.

FM RF ALIGNMENT

Leave the AFC switch at "Off."
The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across "FM" ant. terminals with 120Ω in each lead.	105MC (Unmod.)	FM	105MC	DC probe to point (B). Common to chassis.	L6	Check coil with a tuning wand. If necessary expand or compress coil turns for maximum deflection.
11.	"	"	"	"	"	"	A19, A20	Adjust for maximum deflection.

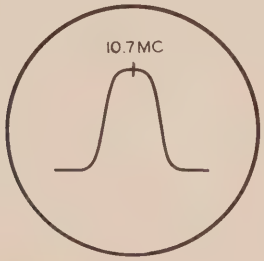


FIG. 1

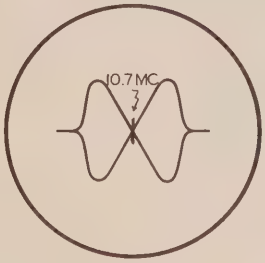


FIG. 2

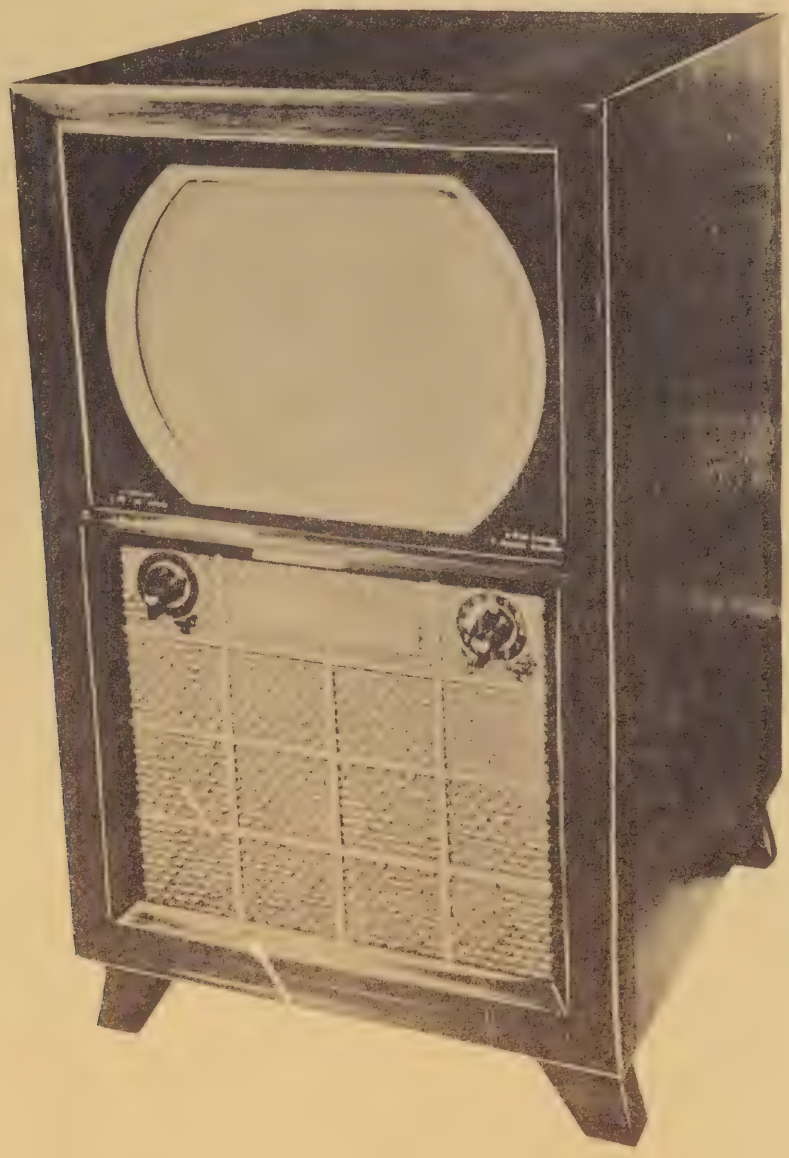
PHOTOFACT* Folder

CORONADO
MODEL 05TV2-43-9010A

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



CORONADO
MODEL 05TV2-43-9010A

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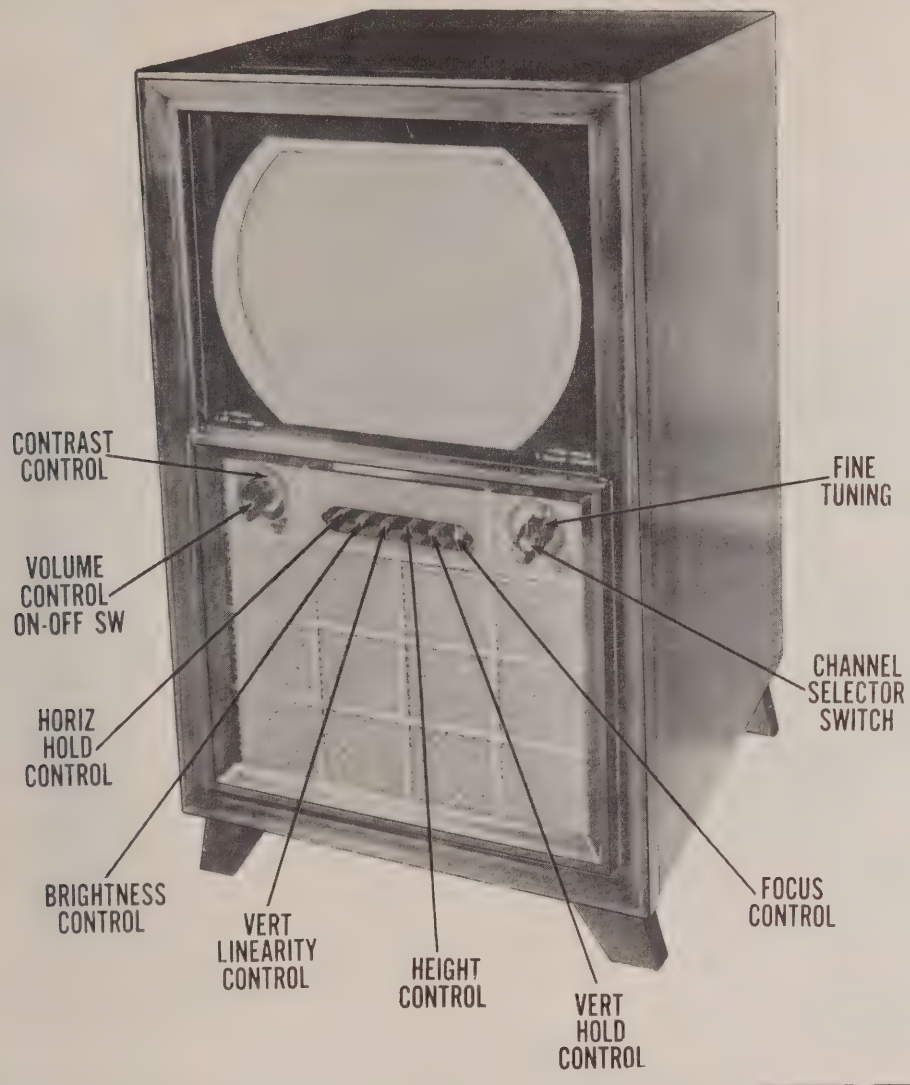
DATE 9-51 SET 146 FOLDER 5

CORONADO
MODEL 05TV2-43-9010A



CORONADO
MODEL 05TV2-43-9010A

TRADE NAME	Coronado, Model 05TV2-43-9010A
SUPPLIER	Gamble-Skogmo Inc., 15N. 8th St. Minneapolis, Minn.
TYPE SET	Television Receiver
TUBES	Twenty-Five
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	2.2 Amp. at 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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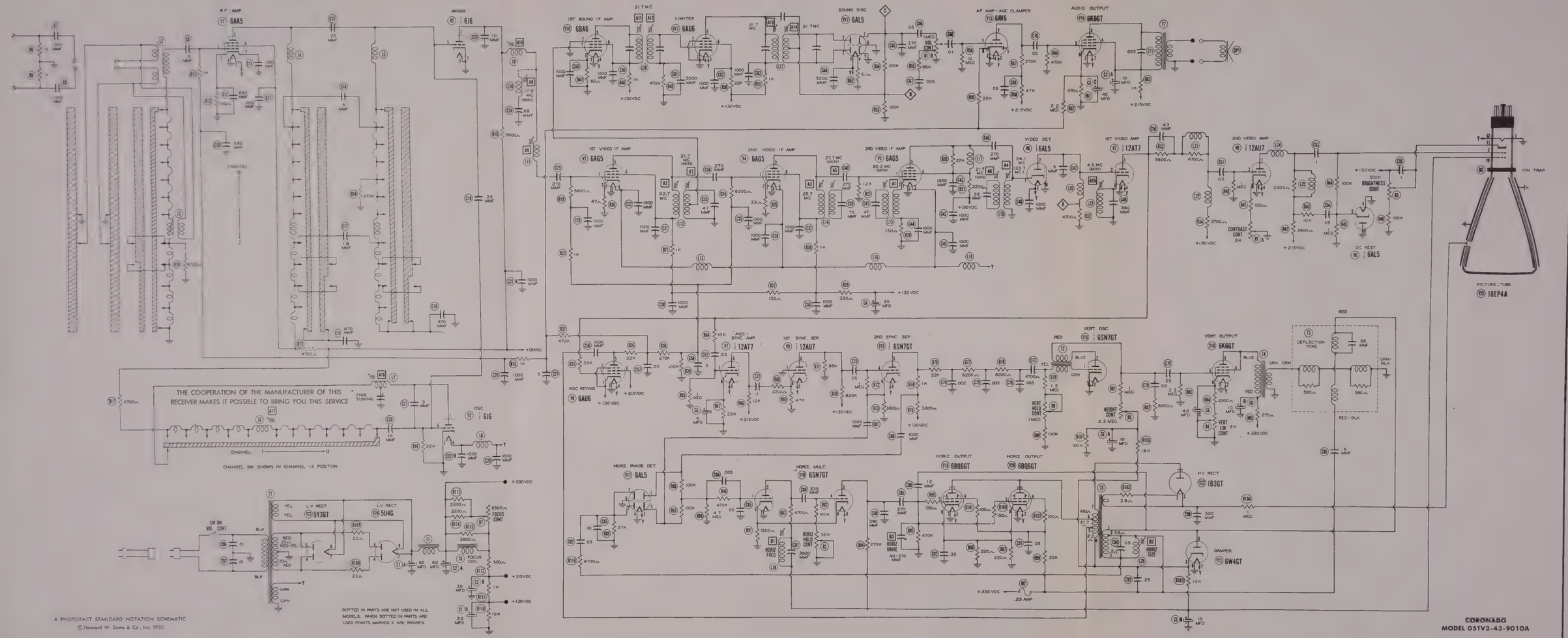

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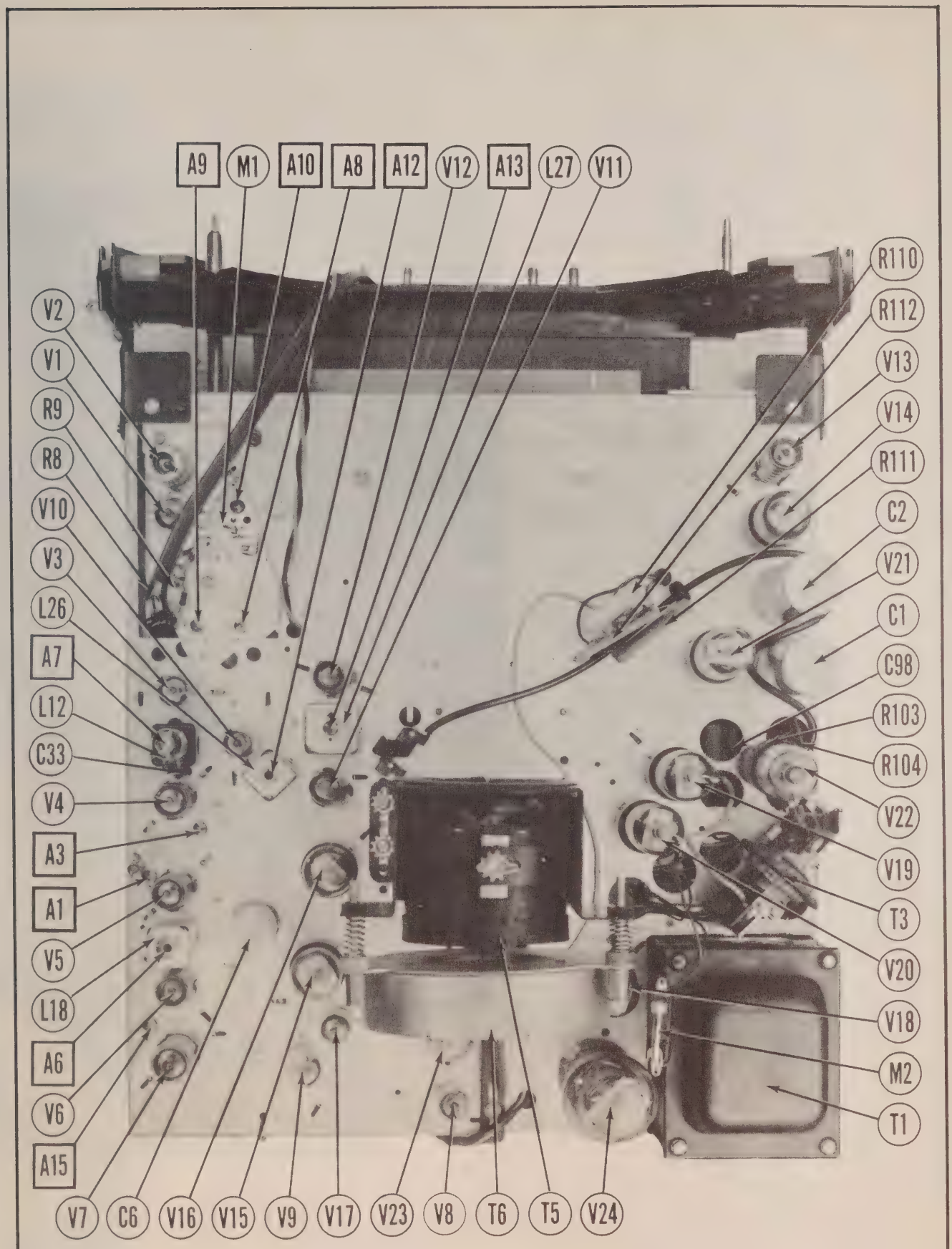
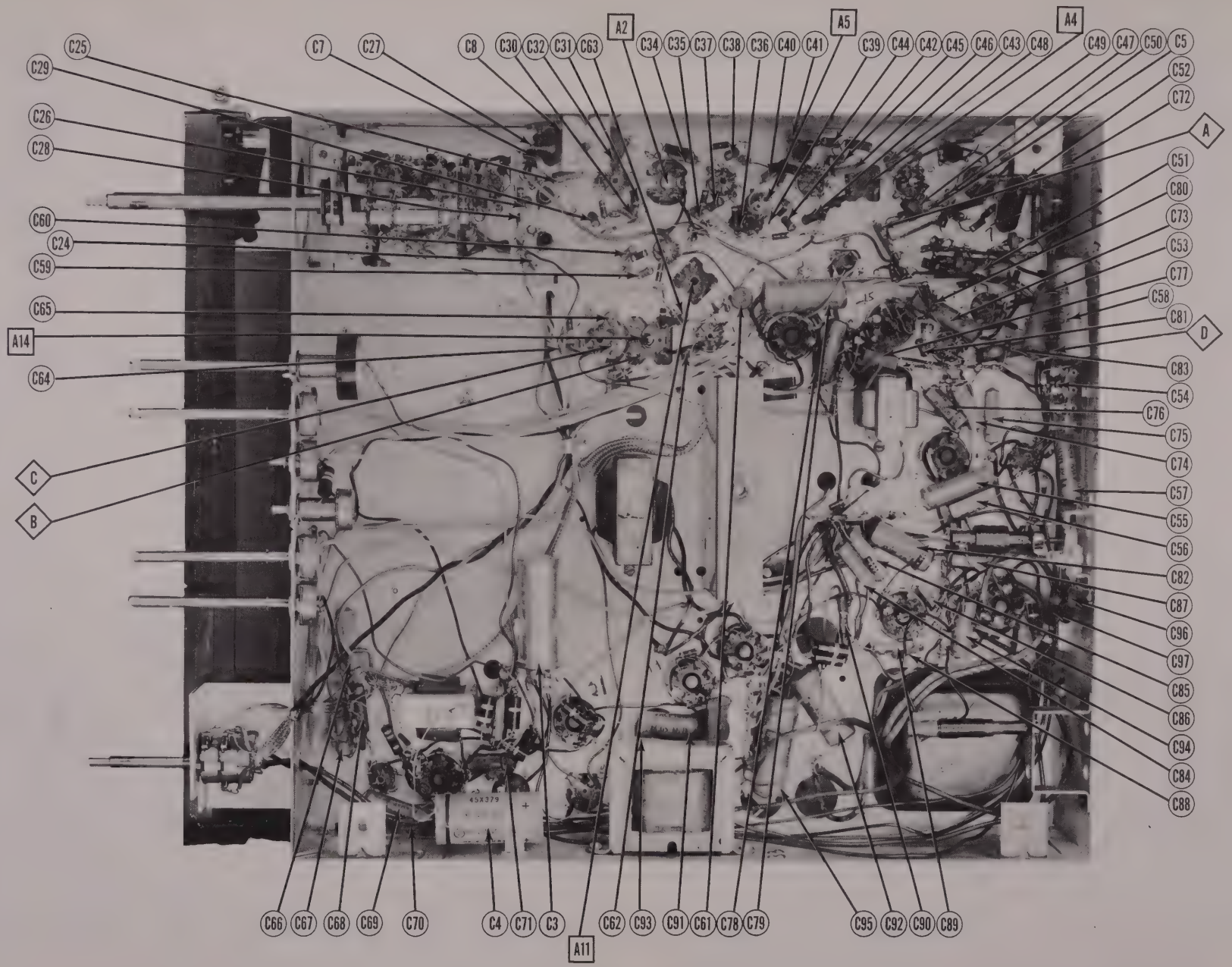
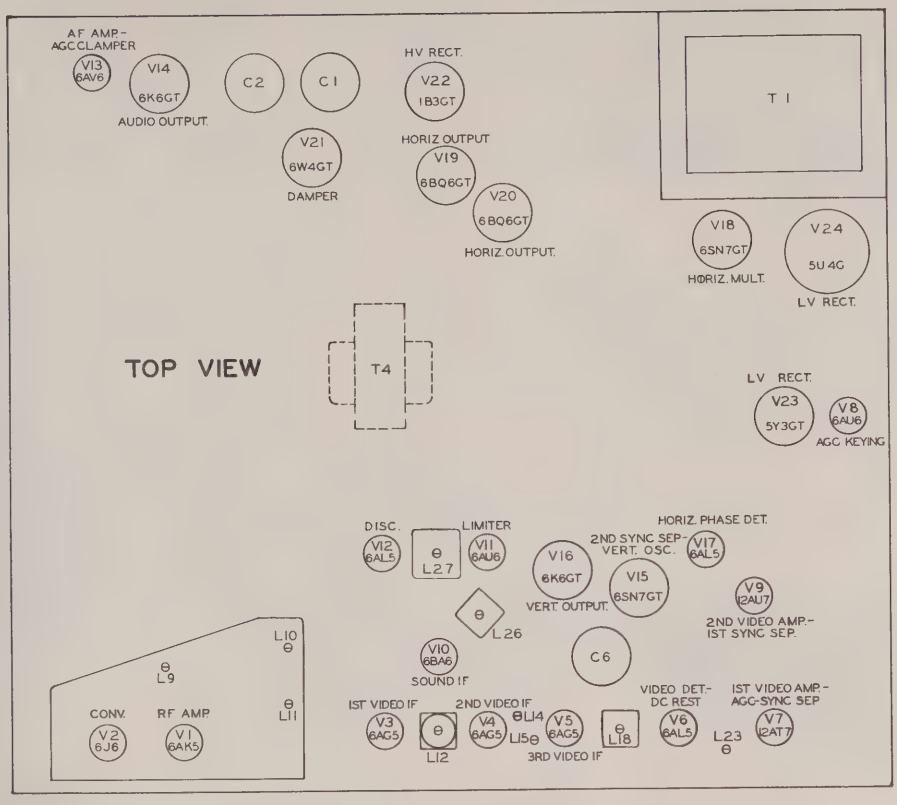
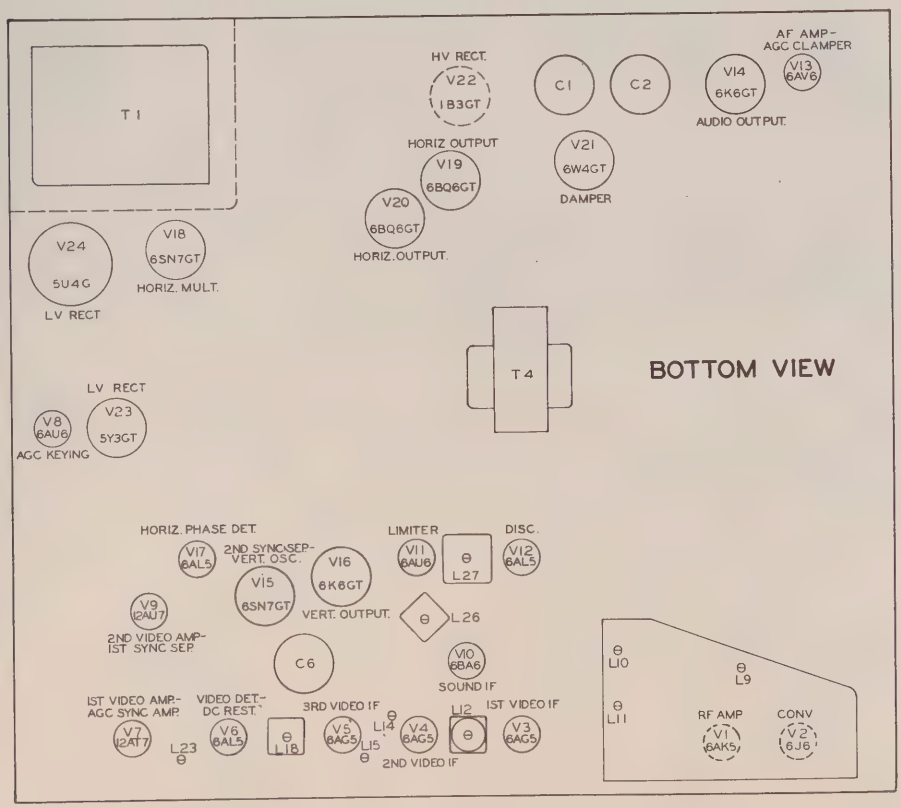


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	-.4VDC	.9VDC	6.3VAC	0V.	90VDC	90VDC	.9VDC		
V 2	6J6	75VDC	95VDC	0V.	6.3VAC	-1.4VDC	§-3.7VDC	0V.		
V 3	6AG5	-1.2VDC	.3VDC	0V.	6.3VAC	105VDC	110VDC	.3VDC		
V 4	6AG5	-1.2VDC	.3VDC	6.3VAC	0V.	105VDC	105VDC	.3VDC		
V 5	6AG5	-.3VDC	1.3VDC	6.3VAC	0V.	110VDC	110VDC	1.3VDC		
V 6	6AL5	0V.	0V.	6.3VAC	0V.	1.4VDC	0V.	-.9VDC		
V 7	12AT7	105VDC	-.9VDC	0V.	6.3VAC	6.3VAC	210VDC	0V.	6.4VAC	0V.
V 8	6AU6	125VDC	130VDC	0V.	6.3VAC	-.5VDC	215VDC	130VDC		
V 9	12AU7	200VDC	0V.	9.6VDC	6.3VAC	6.3VAC	7.7VDC	0V.	1.2VDC	0V.
V 10	6BA6	0V.	0V.	0V.	6.3VAC	110VDC	110VDC	1.5VDC		
V 11	6AU6	-.7VDC	0V.	6.3VAC	0V.	125VDC	85VDC	0V.		
V 12	6AL5	.2VDC	-.7VDC	6.3VAC	1VAC	0V.	0V.	-.7VDC		
V 13	6AV6	-1.6VDC	0V.	6.3VAC	0V.	0V.	-1.2VDC	90VDC		
V 14	6K6GT	-.4VDC	0V.	180VDC	190VDC	0V.	195VDC	6.3VAC	13VDC	
V 15	6SN7GT	-18VDC -16VDC	190VDC 95VDC	0V.	1.2VDC	100VDC	23VDC	0V.	6.3VAC	
V 16	6K6GT	0V. 37VDC	6.3VAC	320VDC	320VDC	0V.	0V.	0V.	35VDC 52VDC	
V 17	6AL5	0V.	0V.	6.3VAC	0V.	3VDC	0V.	-3VDC		
V 18	6SN7GT	.3VDC	330VDC	14VDC	-7.2VDC -5.4VDC	120VDC	14VDC	0V.	6.3VAC	
V 19	6BQ6GT	0V.	6.3VAC	0V.	100VDC	.7VDC	.7VDC	0V.	15VDC	TOP CAP *
V 20	6BQ6GT	460VDC	0V.	330VDC	100VDC	.7VDC	0V.	6.3VAC	15VDC	TOP CAP *
V 21	6W4GT	460VDC	0V.	460VDC	0V.	330VDC	0V.	6.3VAC	0V.	
V 22	1B3GT		* DO NOT MEASURE.							
V 23	5Y3GT	0V.	340VDC	0V.	335VAC	0V.	335VAC	0V.	340VDC	
V 24	5U4G	0V.	340VDC	0V.	335VAC	335VAC	335VAC	335VAC	340VDC	
V 25	16EP4A	0V.	.6VDC	PIN 10 370VDC	PIN 11 19VDC 130VDC	PIN 12 6.3VAC				

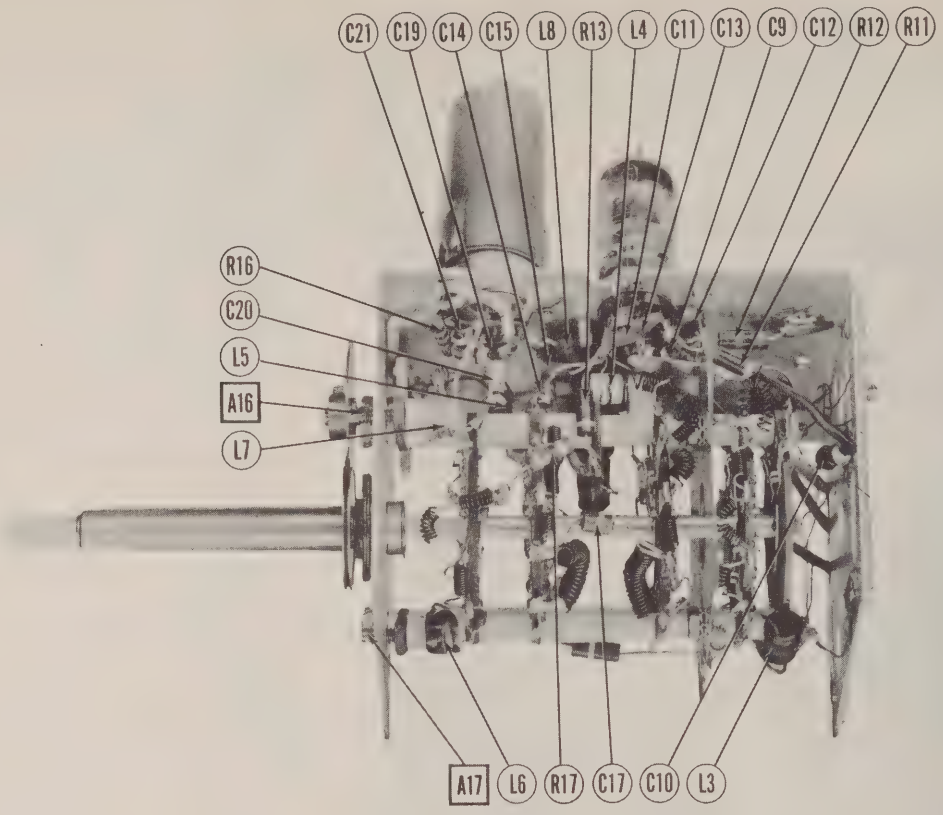
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
* DO NOT MEASURE.

RESISTANCE READINGS

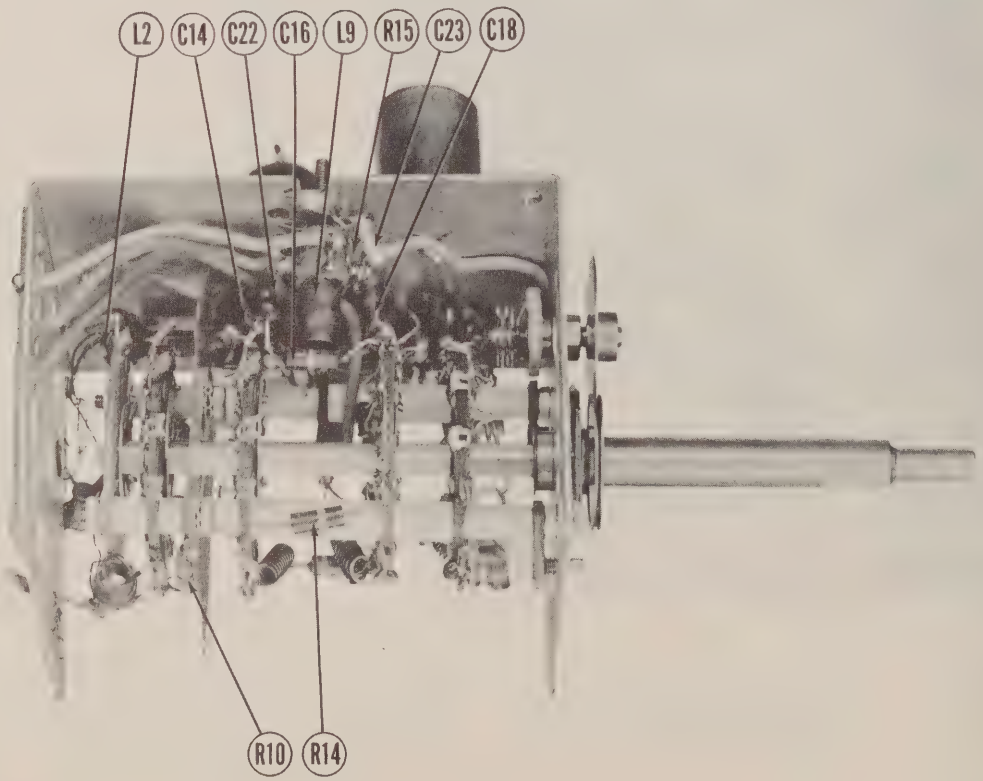
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	650KΩ	100Ω	.1Ω	0Ω	†7KΩ	†7KΩ	100Ω		
V 2	6J6	†7KΩ	†8KΩ	0Ω	.2Ω	270KΩ	22KΩ	0Ω		
V 3	6AG5	105KΩ	47Ω	0Ω	.1Ω	†3.6KΩ	†3.6KΩ	47Ω		
V 4	6AG5	105KΩ	33Ω	.1Ω	0Ω	†3.5KΩ	†3.5KΩ	33Ω		
V 5	6AG5	12KΩ	150Ω	.1Ω	0Ω	†4.3KΩ	†4.3KΩ	150Ω		
V 6	6AL5	.3Ω	0Ω	.1Ω	0Ω	1 Meg.	0Ω	4.7KΩ		
V 7	12AT7	†10KΩ	4.7KΩ	.3Ω	.1Ω	.1Ω	†13KΩ	1 Meg.	22KΩ	0Ω
V 8	6AU6	†40KΩ	†2.1KΩ	0Ω	.1Ω	390KΩ	†1.1KΩ	†2.1KΩ		
V 9	12AU7	†5KΩ	1 Meg.	3.1KΩ	.1Ω	.1Ω	†80KΩ	0Ω	47KΩ	0Ω
V 10	6BA6	0Ω	0Ω	0Ω	.1Ω	†3.2KΩ	†3.2KΩ	82Ω		
V 11	6AU6	470KΩ	0Ω	.1Ω	0Ω	†3.2KΩ	†25KΩ	0Ω		
V 12	6AL5	200KΩ	100KΩ	.1Ω	2.2Ω	0Ω	0Ω	100KΩ		
V 13	6AV6	10 Meg.	0Ω	.1Ω	0Ω	Inf.	650KΩ	†320KΩ		
V 14	6K6GT	600KΩ	0Ω	†2.5KΩ	†2.1KΩ	470KΩ	†30KΩ	.1Ω	470Ω	
V 15	6SN7GT	1.6 Meg. 2.6 Meg.	▲1 Meg. ▲3.5 Meg.	0Ω	1 Meg.	†6.4KΩ	3.3KΩ	0Ω	.1Ω	
V 16	6K6GT	0Ω 5KΩ	.1Ω	†1.2KΩ	†1.2KΩ	3.3 Meg.	Inf.	0Ω	7.2KΩ 2.2KΩ	
V 17	6AL5	27KΩ	27KΩ	.1Ω	0Ω	4.8 Meg.	Inf.	4.8 Meg.		
V 18	6SN7GT	5.2 Meg.	▲15KΩ	1.5KΩ	100KΩ 150KΩ	▲280KΩ	1.5KΩ	0Ω	.1Ω	
V 19	6BQ6GT	Inf.	.1Ω	Inf.	†22KΩ	470KΩ	470KΩ	0Ω	110Ω	TOP CAP ▲30Ω
V 20	6BQ6GT	▲0Ω	0Ω	†320Ω	†22KΩ	470KΩ	11Ω	.1Ω	110Ω	TOP CAP ▲30Ω
V 21	6W4GT	▲0Ω	Inf.	118KΩ	Inf.	†50Ω	Inf.	.1Ω	0Ω	
V 22	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲510Ω
V 23	5Y3GT	Inf.	12KΩ	Inf.	20Ω	Inf.	20Ω	Inf.	12KΩ	
V 24	5U4G	Inf.	12KΩ	Inf.	42Ω	20Ω	42Ω	20Ω	12KΩ	
V 25	16EP4A	0Ω	1.1 Meg.	PIN 10 ▲10KΩ	PIN 11 100KΩ 11KΩ	PIN 12 .1Ω				

FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
† MEASURED FROM PIN 2 OF V24.
▲ MEASURED FROM PIN 3 OF V21.

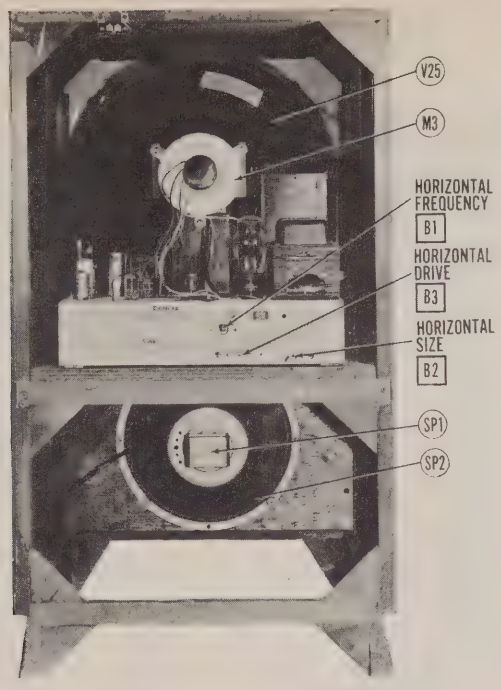
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



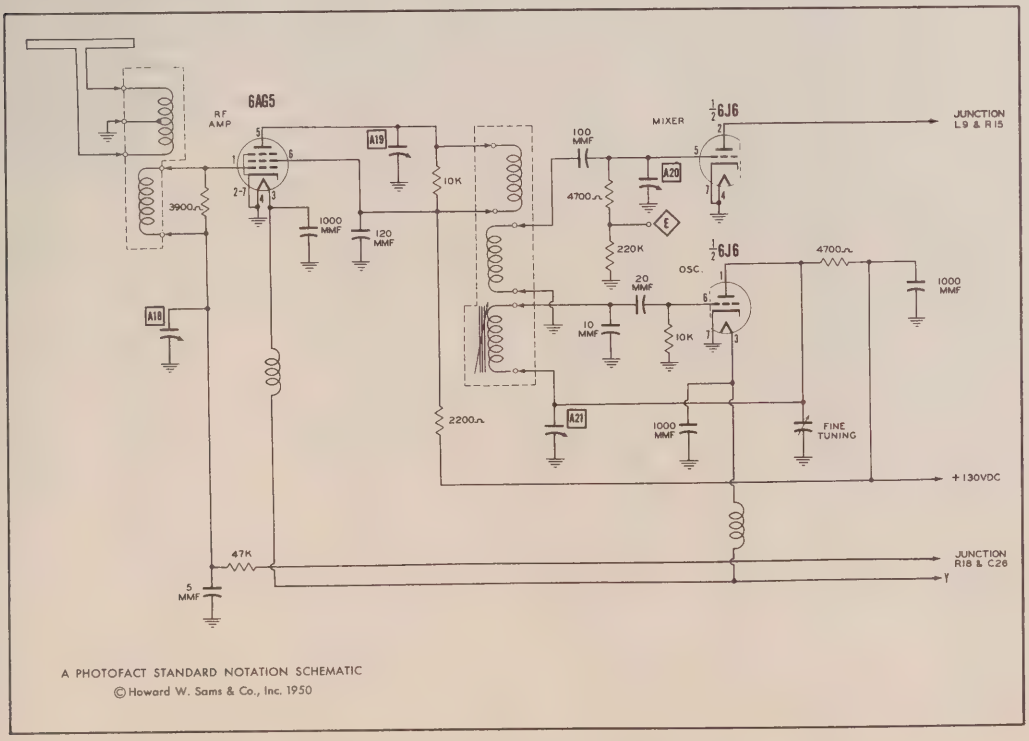
CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Turn the horizontal size slug (B2) fully clockwise and adjust the horizontal drive trimmer (B3) for best linearity from left to right. Readjust B2 until picture fills the mask horizontally. If the B3 is opened counter-clockwise too far, a white line may appear at the left center portion of the picture.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ALTERNATE TUNER

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AK5	6AK5	7BD	
V2	Converter	[illegible]	6J6	7BF	
V3	1st Video IF	6AG5	6AG5	7BD	
V4	2nd Video IF	6AG5	6AG5	7BD	
V5	3rd Video IF	6AG5	6AG5	7BD	
V6	Video Det. -DC Rest.	6AL5	6AL5	6BT	
V7	1st Video Amp. - AGC-Sync. Amp.	12AT7	12AT7	9A	
V8	AGC Keying	6AU6	6AU6	7BK	
V9	2nd Video Amp. - 1st Sync. Sep.	12AU7	12AU7	9A	
V10	Sound IF Amp.	6BA6	6BA6	7BK	
V11	Limiter	6AU6	6AU6	7BK	
V12	Disc.	6AL5	6AL5	6BT	
V13	AF Amp. -AGC Clamper	6AV6	6AV6	7BT	
V14	Audio Output	6K6GT	6K6GT	7S	
V15	2nd Sync. Sep. - Vert. Osc.	6SN7GT	6SN7GT	8BD	
V16	Vert. Output	6K6GT	6K6GT	7S	
V17	Hor. Phase Det.	6AL5	6AL5	6BT	
V18	Hor. Mult.	6SN7GT	6SN7GT	8BD	
V19	Hor. Output	6BQ6GT	6BQ6GT	6AM	
V20	Hor. Output	6BQ6GT	6BQ6GT	6AM	
V21	Damper	6W4GT	6W4GT	4CG	
V22	HV Rect.	1B3GT	1B3GT	3C	
V23	LV Rect.	5Y3GT	5Y3GT	5T	
V24	LV Rect.	5U4G	5U4G	5T	
V25	Picture Tube	16EP4A	16EP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	80	450	45X376	AF166J		UPT44445		TVL-2777	▲ Filter
B	30	450							▲ Filter
C2A	80	450	45X376	AF166J		UPT44445		TVL-2777	▲ Filter
B	30	450							▲ Filter
C3A	10	450	45X375	AF22J8B		UPT1145V4		TVL-3749	■ Output Decoup.
B	10	450							▲ Decoupling
C	40	50							Output Cathode
C4	30	450	45X379	PRS450/30		BR3045A		TVA-1711	Filter
C5	5	25	45X378	PRS150/4		BBR5-25		TVA-1203	Sync. Amp. Cath.
C6A	10	450	45X375	AF22J8B		UPT1145V4		TVL-3749	■ Vert. Osc. Dec.
B	10	450							▲ Vert. Output Dec.
C	40	50							Vert. Output Cath.
C7	1000		47X519	SII000	D6-102		GP2L-001	19C1	Ant. Coupling
C8	1000		47X519	SII000	D6-102		GP2L-001	19C1	Ant. Coupling
C9	15			SII5	D6-150		GP1K-15	19C22	RF Coupling
C10	680			SI680	D6-681		GP2K-680	19C17	AGC Filter
C11	1000			BPD-001	DD-102		811-001	19C1	RF Decoupling
C12	680			SI680	D6-681		GP2K-680	19C17	RF Cathode
C13	1000			BPD-001	DD-102		811-001	19C1	RF Suppressor
C14	470			SI470	D6-471		GP2K-470	19C15	RF Plate Dec.
C15	.25								RF Coupling
C16	.5				TCZ-.5				RF Coupling
C17	1.8								RF Coupling
C18	470			SI470	D6-471		GP2K-470	19C15	Mixer Grid Filter
C19	.25								Osc. Coupling
C20	10			SII0NPO	TCZ-10		NP0K-10	19C3	Osc. Grid Cap.
C21	3			SI3NPO	TCZ-3.3		NP0K-3		Osc. Feedback
C22A	1000			BPD-2 x 001	DD-2-102		882-2 x 0015	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C23	10			SII0NPO	TCZ-10		NP0K-10	19C3	Fixed Trimmer
C24	68		47X501		TCN-68		N750L-68	29C15	Fixed Trimmer
C25	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C26	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	AGC Filter
C27	.5	200	B65604	P288-5		GT2P5		2TM-P5	AGC Filter
C28	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Filament Bypass
C29	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	AGC Filter
C30	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	RF Bypass
C31	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	1st V. IF Dec.
C32	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	1st V. IF Fil.
C33	47			SI47NPO	TCZ-47		NP0M-47	29C14	Fixed Trimmer
C34	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C35	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	RF Bypass
C36	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	2nd V. IF Dec.
C37	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	2nd V. IF Fil.
C38	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Fixed Trimmer
C39	75			SI75NPO	TCZ-75		NP0M-75		IF Coupling
C40	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C41	47	500	47X561	1469-00005	TCZ-47	5R5Q5	NP0M-50	MS-45	Fixed Trimmer
C42	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	RF Bypass
C43	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	3rd V. IF Dec.
C44	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	3rd V. IF Cath.
C45	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	3rd V. IF Fil.
C46	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C47	5		47X562	SI5	TCZ-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C48	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	V. Det.-DC Res. Fil.
C49	360	500	47X568	1469-00035			GP2K-360	1FM-335	Fixed Trimmer
C50	43		47X563		TCZ-43		NP0M-43		Peaking
C51	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C52	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C53	.1	400	D65104	P488-1	DF-104	PTE4P1		4TM-P1	Video Coupling
C54	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C55	.1	200	B65104	P288-1	DF-104	PTE4P1		2TM-P1	Pic. Tube Cath.
C56	1000	1000	47X569	1464-HV-001					Hor. Sweep Coupling
C57	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	AGC Filter
C58	.5	200	B65504	P288-5		GT2P5		2TM-P5	AGC Filter
C59	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	S. IF Decoupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C60	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	S. IF Cath.
C61	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Limiter Grid Filter
C62	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Limiter Screen
C63	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Limiter Plate Dec.
C64	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Discr. Fil.
C65	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	RF Bypass
C66	.05	200	D67503	P288-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C67	.005	600	B65502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Tone Comp.
C68	.01	200	B65103	P488-01	D6-103	PTE4S1	811-01	4TM-S1	Audio Coupling
C69	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	AF Amp. Plate Dec.
C70	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C71	.005	600	F65502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate Byp.
C72	.1	400	F65104	P488-1	DF-104	PTE4P1		4TM-P1	Sync. Coupling
C73	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Sync. Coupling
C74	.002	600	B65202	P688-002	D6-202	PTE6D2	GP2M-002	6TM-D2	Integrator Net.
C75	.005	600	D65502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Integrator Net.
C76	.005	600	B65502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Integrator Net.
C77	4700	500	47X543	1467-005	D6-472	1D5D5	GP2M-0047	1FM-25	Vert. Sync. Coupling
C78	.02	600	F65203	P688-02		PTE6S2		6TM-S2	Vert. Discharge
C79	.25	400	D65254	P488-25		GT4P25		4TM-P25	Vert. Sweep Coupling
C80	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Hor. Sync. Coupling
C81	1000		47X519	SII000	D6-102	1W5DI	GP2L-001	29C21	Hor. Sync. Coupling
C82	.05	600	F67503	P688-05	DF-503	PTE6S5		6TM-S5	Hor. Feedback
C83	.01	200	B65103	P488-01	D6-103	PTE4S1	811-01	4TM-S1	Voltage Divider
C84	.005	600	F65502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	AFC Filter
C85	.05	200	B65503	P288-05	DF-503	PTE4S5		2TM-S5	AFC Filter
C86	330	500	47X570	1468-00035	D6-331	5W5T3	GP2K-330	1FM-335	Hor. Feedback
C87	3900	500	47X572	1464-004		1DR5D4		MS-24	Fixed Trimmer
C88	390	500	47X571	1468-004	D6-391	5W5T4	GP2K-390	1FM-34	Hor. Discharge
C89	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	Hor. Sweep Coupling
C90	12	2500	47X574						Hor. Feedback
C91	.05	600	F67503	P688-05	DF-503	PTE6S5		6TM-S5	Hor. Output Screen
C92	.35	200	B65354	P288-33		GT2P5		2TM-P47	Hor. Output Cath.
C93	.25	200	B65254	P488-25		GT2P25		2TM-P25	Damper Filter
C94	.05	200	D67503	P288-05	DF-503	PTE4S5		2TM-S5	Fixed Trimmer
C95	.5	200	B65504	P288-5		GT2P5		2TM-P5	Hor. Sweep Coupling
C96	.01	400	47X410	P488-01	D6-103	PTE4S1	811-01	4TM-S1	Line Filter
C97	.01	400	47X410	P488-01	D6-103	PTE4S1	811-01	4TM-S1	Line Filter
C98	500	20000	47X560	HV20C	TV3-502				HV Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	3000Ω	½	78X4	Concentrikit B11-112 * B13-137X * K-202 * 76-1 *		SBBT-503-S	Contrast control-front
B	1 Meg.	½					Volume control-tapped at 200KΩ-rear
C	Shaft End						Attach per instr. in "Concentrikit".
D	Switch						Attach per instr. in "Concentrikit".
R2A	50KΩ	½	40X299	Q11-123, C-3†	AG-44-S	B-31	Horiz. hold control
B	Shaft		Not Req.	Not Req.	KSS-5	AK-16 ∮	Attach to R2A per instructions
R3A	500KΩ	½	40X297	Q11-133, C-3†	AG-58-S	B-59	Brightness control
B	Shaft		Not Req.	Not Req.	KSS-5	AK-16 ∮	Attach to R3A per instructions
R4A	5000Ω	½	40X294	Q11-114			Vert. linearity control
B	Sleeve Bushing		Not Req.	S-3			Attach to R4A per instructions
R5A	2.5 Meg.	½	40X293	Q11-239	AG-84-S	B-83 †	Height control
B	Shaft		Not Req.	RQ	FKS-1/4	Not Req.	Attach to R5A per instructions
R6A	1 Meg.	½	40X298	Q11-137, C-3†	AG-61-S	B-69	Vert. hold control
B	Shaft		Not Req.	Not Req.	KSS-5	AK-16 ∮	Attach to R6A per instructions
R7	6500Ω	2	40X302			SV-919	Focus control-Wire Wound

* Additional parts to be used with "Concentrikit".
† File slot in shaft to duplicate original.
† Saw off shaft of new control so that C-3 coupler can be employed to connect part of original shaft to new control.
∮ Cut off shaft to replacement control and attach original shaft using coupler.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED
R8	1000Ω	½	B85102	BTS-1000	Antenna Isolation
R9	1000Ω	½	B85102	BTS-1000	Antenna Isolation
R10	4700Ω	½	B83472	BTS-4700	RF Coil Shunt
R11	1000Ω	½	B85102	BTS-1000	RF Amp. Grid
R12	100Ω 20%	½	B84101	BTS-100	RF Amp. Cathode
R13	4700Ω	½	B83472	BTS-4700	RF Amp. Decoupling
R14	270KΩ 20%	½	B85274		Mixer Grid
R15	5600Ω	½	B83562		Mixer Plate
R16	22KΩ	½	B84223		Osc. Grid
R17	4700Ω	½	B83472	BTS-4700	Osc. Plate
R18	1000Ω	½	B85102	BTS-1000	AGC Network
R19	56000Ω 5%	½	B83562		1st Video IF Amp. Grid
R20	47Ω 5%	½	B83470		1st Video IF Amp. Cathode
R21	1000Ω	½	B85102	BTS-1000	1st Video IF Amp. Decoupling
R22	150Ω	½	B84151	BTS-150	Decoupling
R23	1000Ω	½	B85102	BTS-1000	AGC Network
R24	82000Ω 5%	½	B83822		2nd Video IF Amp. Grid
R25	33Ω 5%	½	B83330		2nd Video IF Amp. Cathode
R26	1000Ω	½	B85102	BTS-1000	2nd Video IF Amp. Decoupling
R27	12KΩ 5%	½	B83123		3rd Video IF Amp. Grid
R28	150Ω	½	B84151	BTS-150	3rd Video IF Cathode
R29	330Ω	½	B84331	BTS-330	Decoupling
R30	22KΩ	½	B84223		3rd Video IF Coil Shunt
R31	2200Ω	½	B84222	BTS-2200	De coupling
R32	47000Ω 5%	½	B83472	BTS-4700-5%	Video Det. Diode Load
R33	5600Ω	½	C84562	BTA-5600	1st Video Amp. Plate
R34	27000Ω 5%	1	C83272	BTA-2700-5%	1st Video Amp. Plate
R35	33KΩ	½	B84333	BTS-33K	AGC Keying Grid
R36	22KΩ	½	B84223	BTS-22K	AGC Network
R37	470KΩ	½	B85474	BTS-470K	AGC Network
R38	270KΩ	½	B85274	BTS-270K	AGC Network
R39	100KΩ	½	B84104	BTS-100K	AGC Network
R40	1 Meg.	½	B84105	BTS-1 Meg.	2nd Video Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
R41	100Ω	½	B84101	BTS-100	2nd Video Amp. Cathode
R42	3900Ω 5%	½	B83392	BTS-3900-5%	2nd Video Amp. Plate
R43	10KΩ	½	B84104	BTS-10K	Isolation
R44	100KΩ 20%	½	B84104	BTS-100K	Picture Tube Grid
R45	1 Meg.	½	B84105	BTS-1 Meg.	DC Rest. Load
R46	100KΩ 20%	½	B84104	BTS-100K	Voltage Divider
R47	82Ω	½	B84820		Sound IF Amp. Cathode
R48	1000Ω	½	B85102	BTS-1000	Sound IF Amp. Decoupling
R49	470KΩ 20%	½	B85474		Limiter Grid
R50	22KΩ	½	B84223		Limiter Screen
R51	1000Ω	½	B85102	BTS-1000	Limiter Plate Decoupling
R52	5.1Ω	½	43X239	BW-½-4.7	Disc. Filament-Wire Wound
R53	100KΩ	½	B84104	BTS-100K	Disc. Diode Load
R54	100KΩ	½	B84104	BTS-100K	Disc. Diode Load
R55	68KΩ	½	B84683	BTS-68K	Tone Compensation
R56	10 Meg. 20%	½	B85106	BTS-10 Meg.	AF Amp. Grid
R57	270KΩ 20%	½	B85274	BTS-270K	AF Amp. Plate
R58	47KΩ 20%	½	B84473	BTS-47K	AF Amp. Plate Decoupling
R59	22KΩ	½	B84223	BTS-22K	AGC Network
R60	470KΩ 20%	½	B85474	BTS-470K	Audio Output Grid
R61	470Ω	1	C84471	BTA-470	Audio Output Cathode
R62	2.2 Meg.	½	B84225	BTS-2.2 Meg.	AGC Network
R63	1000Ω	2	D84102	BTB-1000	Audio Output Decoupling
R64	10KΩ	½	B84104	BTS-10K	Isolation
R65	1 Meg.	½	B84105	BTS-1 Meg.	Sync. Amp. Grid
R66	12KΩ	½	B83123	BTS-12K	Sync. Amp. Plate
R67	22KΩ	½	B84223	BTS-22K	Sync. Amp. Cathode
R68	2200Ω	½	B84222	BTS-2200	Isolation
R69	47KΩ 5%	½	B84473	BTS-47K-5%	1st Sync. Sep. Cathode
R70	820KΩ	½	B84824	BTS-820K	1st Sync. Sep. Plate
R71	68KΩ	½	B84683	BTS-68K	Voltage Divider
R72	1 Meg.	½	B84105	BTS-1 Meg.	2nd Sync. Sep. Grid
R73	3300Ω 5%	½	B83332	BTS-3300-5%	2nd Sync. Sep. Cathode
R74	1000Ω	½	B85103	BTS-1000	2nd Sync. Sep. Plate
R75	3300Ω 5%	½	B83332	BTS-3300-5%	2nd Sync. Sep. Plate
R76	22KΩ	½	B8422K	BTS-22K	Integrator
R77	8200Ω	½	B83822	BTS-8200	Integrator
R78	8200Ω	½	B83822	BTS-8200	Integrator
R79	1.5 Meg.	½	B84155	BTS-1.5 Meg.	Vert. Osc. Grid
R80	100KΩ 20%	½	B84104	BTS-100K	Voltage Divider
R81	1 Meg.	½	B84105	BTS-1 Meg.	Vert. Osc. Plate
R82	8200Ω	½	B83822	BTS-8200	Vert. Peaking
R83	3.3 Meg 20%	½	B85335	BTS-3.3 Meg.	Vert. Output Grid
R84	2200Ω	½	B84222	BTS-2200	Vert. Output Cathode
R85	270Ω	½	B85270	BTS-270	Vert. Output Decoupling
R86	100KΩ	½	B84104	BTS-100K	Horiz. Phase Det. Diode Load
R87	100KΩ	½	B84104	BTS-100K	Horiz. Phase Det. Diode Load
R88	4.7 Meg. 20%	½	B85475	BTS-4.7 Meg.	Horiz. Phase Det. Diode Load
R89	27KΩ	½	B84273	BTS-27K	Horiz. AFC Filter Network
R90	470KΩ 20%	½	B85474	BTS-470K	Horiz. AFC Filter Network
R91	1500Ω	½	B84152	BTS-1500	Horiz. Mult. Cathode
R92	100KΩ	½	B84104	BTS-100K	Horiz. Mult. Grid
R93	4700Ω 5%	½	B83472	BTS-4700-5%	Horiz. Mult. Plate
R94	270KΩ 20%	½	B85274	BTS-270K	Horiz. Mult. Plate
R95	470KΩ	2	B85474	BTS-470K	Horiz. Output Grid
R96	220Ω	2	D84221	BW-2-220	Horiz. Output Cathode
R97	220Ω	2	D84221	BW-2-220	Horiz. Output Cathode
R98	22KΩ	5	43X253		Horiz. Output Screen-Wire Wound
R99	150Ω	½	B84151		Parasitic Suppressor
R100	150Ω	½	B84151		Parasitic Suppressor
R101	100Ω	½	B84101		Parasitic Suppressor
R102	100Ω	½	B84101		Parasitic Suppressor
R103	3.9Ω	½	43X251		HV Rect. Filament-Wire Wound
R104	1 Meg.	1	C85105		HV Filter
R105	10KΩ	1	C84104	BTA-10K	Decoupling
R106	18KΩ	1	C84183	BTA-18K	Decoupling
R107	100KΩ	2	D84104	BTB-100K	Voltage Divider
R108	22Ω	1	C84220		Surge Limiter
R109	22Ω	1	C84220		Surge Limiter
R110	10KΩ	5	43X247	1 3/4A-10K	Bleeder-Wire Wound
R111	1000Ω	10	43X248	1 3/4A-1000	Filter-Wire Wound
R112	500Ω	10	43X245	1 3/4A-500	Filter-Wire Wound
R113	3900Ω	2	D83392	BTB-3900	Focus Coil Shunt
R114	2200Ω	2	D84222	BTB-2200	Focus Coil Shunt
R115	2200Ω	2	D84222	BTB-2200	Focus Coil Shunt
R116	47000Ω 5%	½	B83472	BTS-4700-5%	Feedback

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② 2.2A	720VCT .270ADC	5VAC ② 5A	6.3VAC ② 10.6A	53X302			TP-360

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	175Ω	1300Ω	54X5	A-8111 ①	A-3000 ①	TBO-2 ①	Vert. Block Osc. Trans.
T3	510Ω	3.8Ω	43X303				Hor. Output Trans.
	Tap ② 300, 2.3Ω	Tap ② 3.6Ω SEC. 2 0Ω					
T4	1300Ω	10Ω	51X147	A-8112	A-3036	TSO-5 ①	Vert. Output Trans.
T5A	200		9A2080	DY-7	MD-70		Hor. Deflection Coil
B	6Ω						Vert. Deflection Coil
T6	670Ω		9A2081				Focus Coil

① Drill one new mounting hole.

CORONADO
MODEL 05TV2-43-9010A

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	7100Ω	4.2Ω	450Ω	.5Ω	51X146	A-3878	A-2931	RO-13	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CORONADO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	4.2Ω	12A490	ST-101 MOD. P12-T	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 1/2"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↶)	CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.270ADC	51Ω	2 Henries	52X88	C-2326	C-2991	TR-3300①	① Drill one new mounting hole.

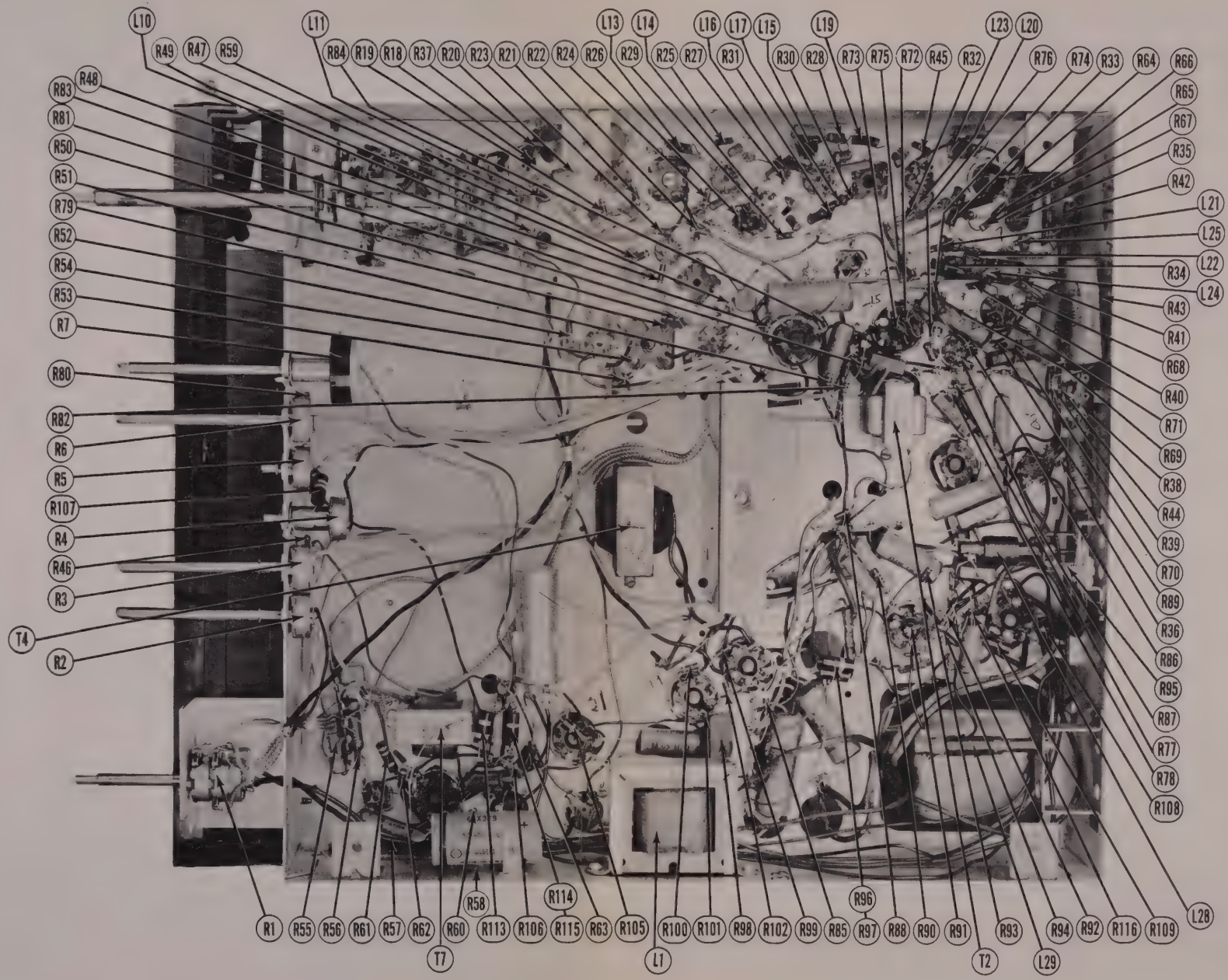
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω	0Ω	*		
L3	Ant. Coil	0Ω	0Ω	*		
L4	RF Coil	0Ω		*		
L5	Mixer Grid	0Ω		*		
L6	Osc. Coil	0Ω		*		
L7	Osc. Coil	0Ω		*		
L8	Fil. Choke	.1Ω		*		
L9	1st Video IF	.3Ω				
L10	Video Trap	.2Ω		9A2059		
L11	1st Video IF Coupling	.3Ω		9A2072		
L12	2nd Video IF -Sound Take Off	.2Ω	0Ω	9A2076		
L13	Fil. Choke	0Ω		9A2033		
L14	3rd Video IF	.2Ω	0Ω	9A2055		With adj. channel sound trap
L15	Adj. Channel Video Trap	.2Ω	.2Ω	9A2073		
L16	Fil. Choke	0Ω		9A2033		
L17	RF Choke	3.8Ω		9A1979		
L18	4th Video IF	.3Ω		9A2071		With trap
L19	Fil. Choke	0Ω		9A2033		
L20	Peaking	10Ω		9A2090	19-1923	390 microhenries, gren dot
L21	Peaking	5Ω		9A2086	19-1920 †	95 microhenries, yellow dot wound on 4.7KΩ resistor.
L22	Peaking	7.2Ω		9A2088	19-1922	196 microhenries, blue dot
L23	4.5MC Trap	.3Ω		9A2074		
L24	Peaking	5.8Ω		9A2087	19-1921	125 microhenries, white dot
L25	Peaking	7Ω		9A2089	19-1921 #	183 microhenries, red dot, wound on 2.2KΩ resistor
L26	Sound IF	.2Ω	.1Ω	9A1986		
L27	Disc. Trans.	.1Ω	.1Ω	9A2049		
L28	Horiz. Osc.	50Ω		9A2096		
L29	Horiz. Size	.2Ω		9A2075		

* Part of tuner., Part Number 25A1074
† Parallel with 4.7KΩ resistor.
# Parallel with 2.2KΩ resistor.

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M1A	RF Tuner	25A1074	Switch Type
B	RF Tuner	25A1070	Turret Type
M2	Fuse	16X145	.25Amp. - 250V.
M3	Ion Trap	2A401	
B3	Trimmer	17A261	Horiz. Drive (40 - 370 MMF)
	Safety Glass	17X116	
	Escutcheon	4X1065	Channel Selector
	Escutcheon	4X1029	Volume and Contrast
	Knob	10A741	Channel Selector
	Knob	10A742	Fine Tuning
	Knob	10A752	Contrast
	Knob	10A753	Volume



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PHOTOFACT* Folder

*TRADE MARK

EMERSON MODELS 665-B
(Ch. 120131-B AND RADIO Ch. 120130B)

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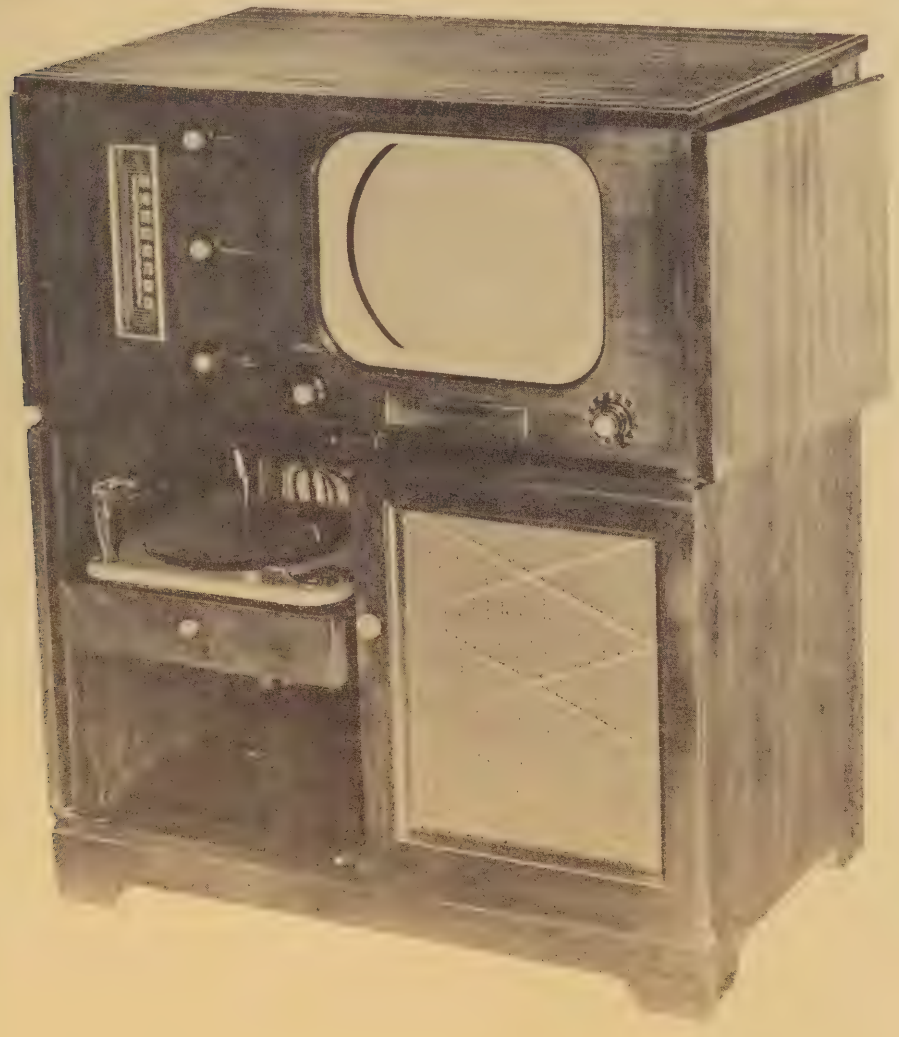

EMERSON MODELS 665-B
(Ch. 120131-B AND RADIO Ch. 120130B)

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

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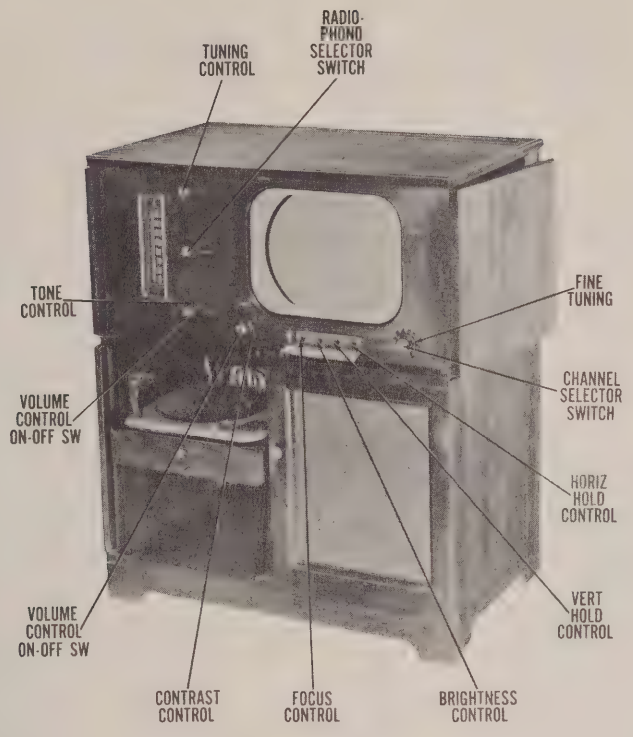
EMERSON MODELS 665-B (Ch. 120131-B AND RADIO Ch. 120130B)



TRADE NAME	Emerson Model 665 Series B (TV Ch. 120131-B, Radio Ch. 120130-B)
MANUFACTURER	Emerson Radio & Phono Corp., 111 Eight Avenue New York, N.Y.
TYPE SET	TV-AM-Phono Combination
TUBES	Twenty Four
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	(TV) 1.2 Amp. @ 117 Volts AC (Radio) .40 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13-(AM) 540-1620KC

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FOR SERVICE INFORMATION ON RECORD CHANGER UNIT SEE SIMILAR MODEL IN PHOTOFACT FOLDER #11 SET #75 OR RECORD CHANGER MANUAL CM-3, SECTION 119.

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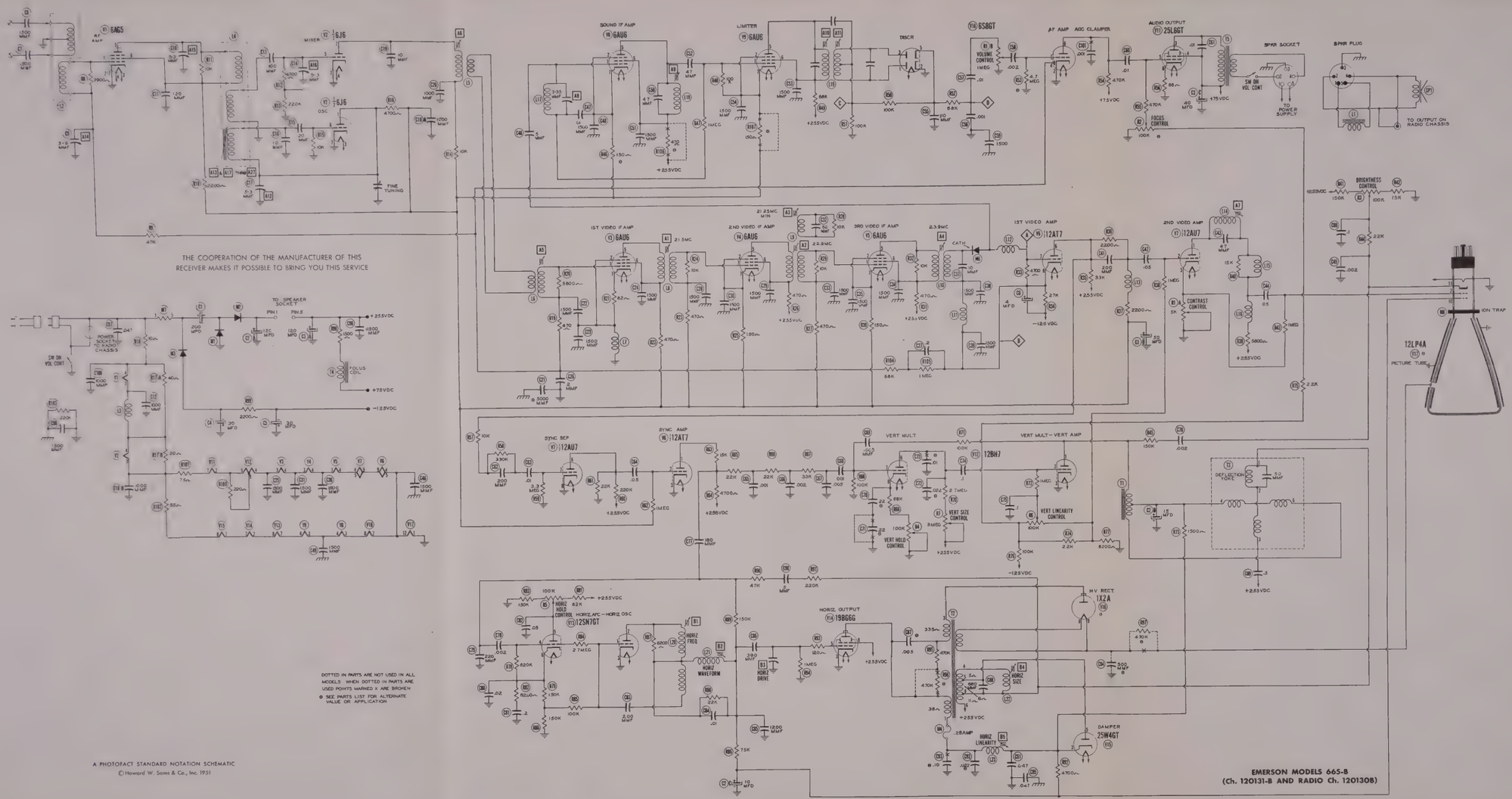

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⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

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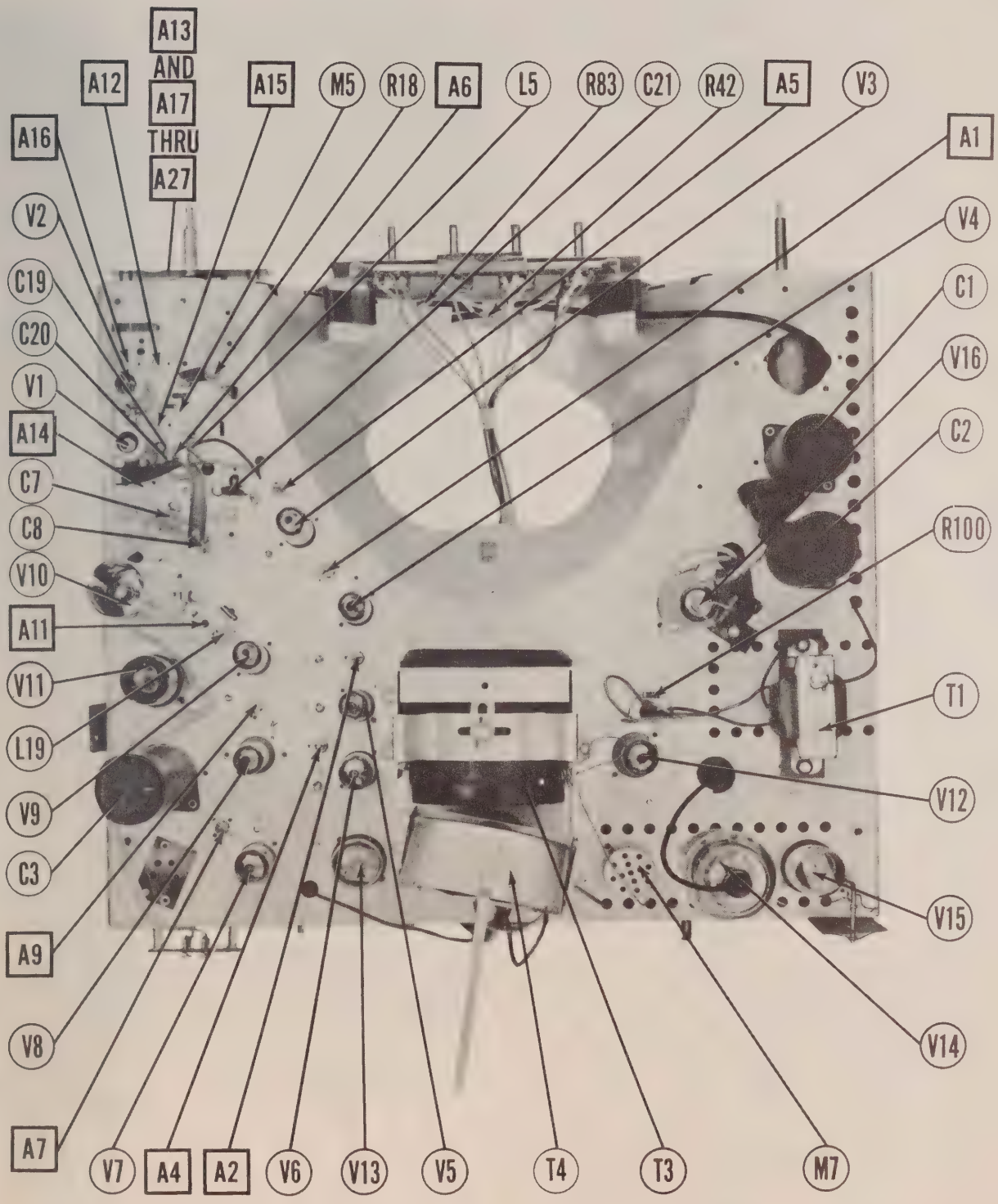
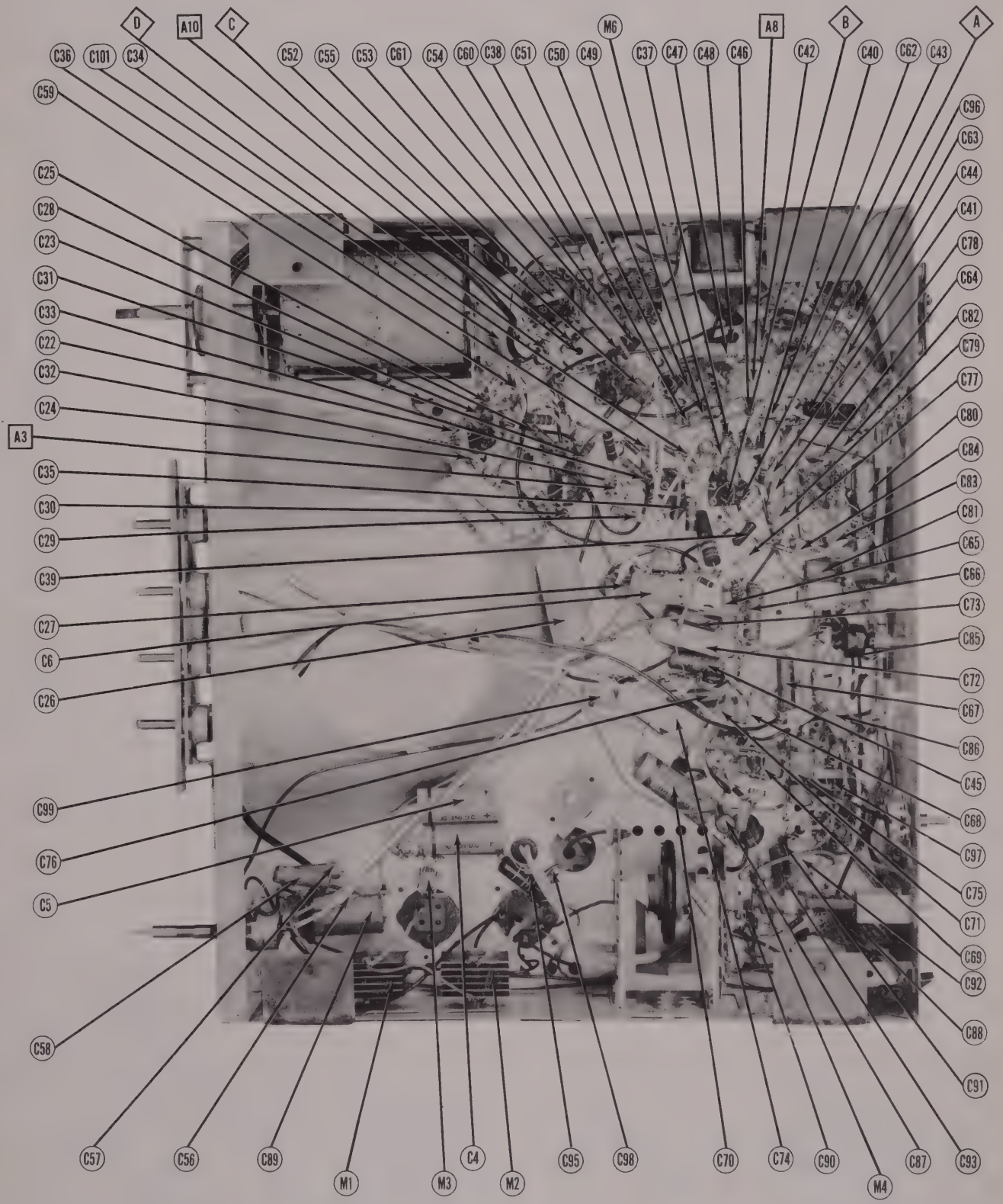
EMERSON MODELS 665-B
(Ch. 120131-B AND RADIO Ch. 1201308)

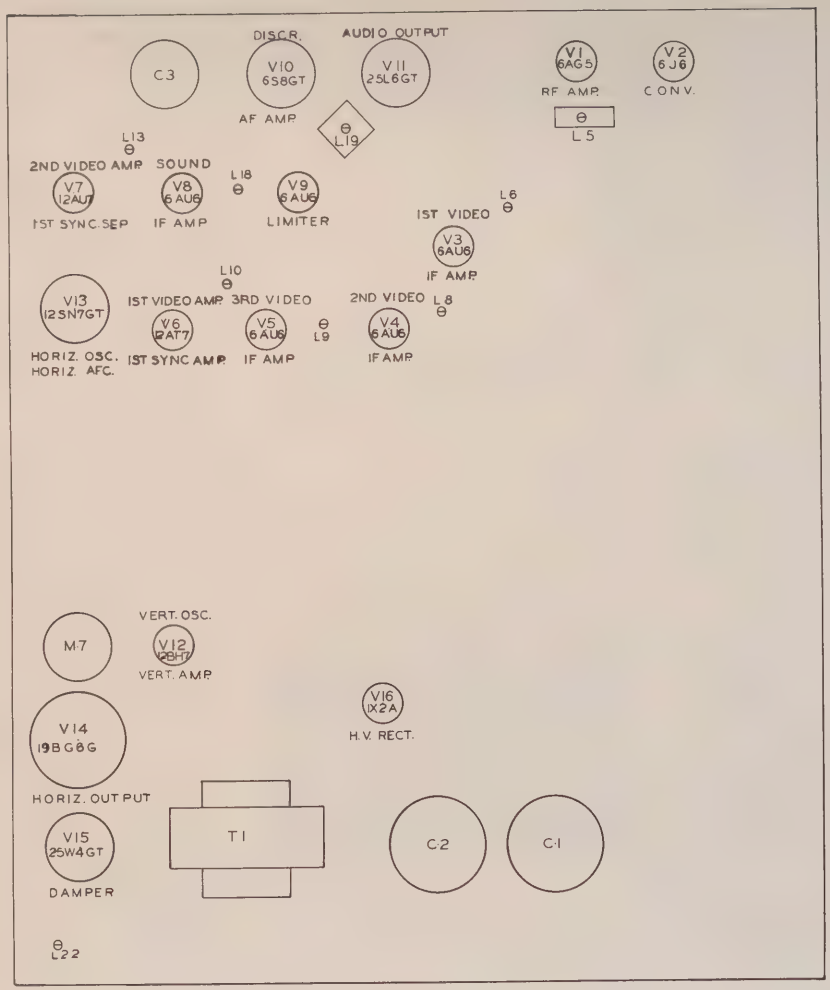
EMERSON MODEL 665-B
(Ch. 120131-B and RADIO Ch. 120130-B)



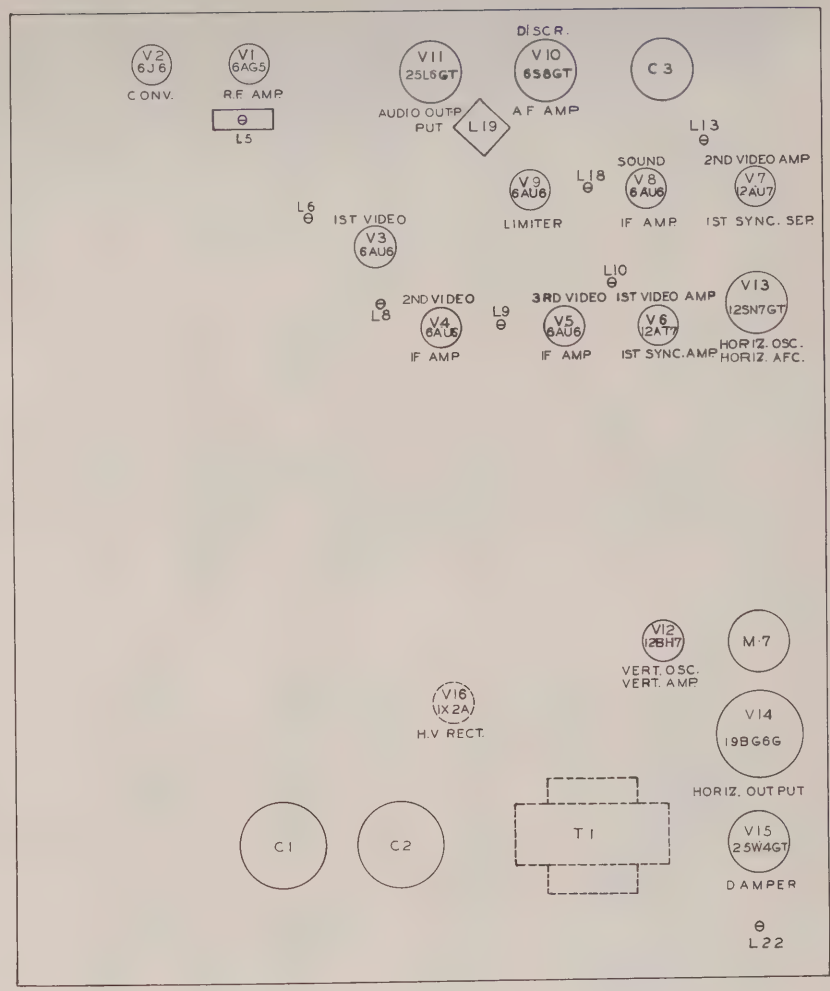
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

EMERSON MODEL 665-B
(Ch. 120131-B and RADIO Ch. 120130-B)

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use an isolation transformer to protect the test equipment.
If the set is to be aligned with the picture tube removed, connect a short between pins 1 and 12 of the picture tube socket.
The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 2 volt battery to the junction of C26 and R104, connect the positive lead to B-.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD.	High side to pin 1, (Grid) of 6AU6, (V3). Low side to B-.	Not used	25.5MC (unmod.)	Any	USE VTVM DC probe to Point (A). Common to Point (B).	A1	Adjust for maximum deflection. Attenuate generator to maintain 2 volt reading.
2.	"	"	"	22.9MC	"	"	A2	"
3.	"	"	"	21.25MC	"	"	A3	Adjust for MINIMUM deflection.
4.	"	"	"	23.9MC	"	"	A4	Adjust for maximum deflection.
5.	"	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to B-.	24MC (10MC SWP)	21.25MC 25.75MC	"	Vert. Amp. thru detector probe, (fig. 1) to pin 1, (Grid) of 6AU6, (V4). Low side toBB-.	A5, A6	Adjust for response curve similar to fig. 2 with markers as shown.
6.	"	"	"	21.25MC 22.5MC 25.75MC	"	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to fig. 3. If necessary retouch A1, A2, A3 and A4 for proper response.

4.5 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD.	High side to Point A . Low side to B-.	Not used	4.5MC (400∿ Mod.)	Any	Vert. Amp. thru detector, (fig. 1), to pin 2 of picture tube. Low side to B-.	A7	Adjust for MINIMUM 400∿ indication on scope.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD.	High side to pin 1, (Grid) of 6AU6, (V8). Low side to B-.	4.5MC (450KC SWP)	4.5MC (unmod.)	Any	Vert. Amp. thru 22KΩ to Point (C). Low side to B-.	A8, A9, A10	Adjust for maximum amplitude and symmetry as per fig. 4.
9.	"	"	"	"	"	Vert. Amp. to Point (D). Low side to B-.	A11	Adjust A11 so 4.5MC occurs at center of crossover lines as per fig. 5. Retouch A10, for maximum amplitude and straightness of crossover lines.

RF ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The overall oscillator circuit adjustment, (A2), has been properly adjusted at the factory and should not be adjusted in the field.
Adjustments A13 and A17 thru A27 are accessiblethrough a hole in the front of the tuner as the channel switch is turned to the corresponding channel.
Set the fine tuning control to the mid-position of its range.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminal with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. to Point (A). Low side to chassis.	A13	Adjust to place sound marker in "notch" as shown in fig. 6.
11.	"	"	"	"	"	"	A14, A15 A16	Adjust for maximum amplitude of response curve with markers as shown in fig. 6.
12.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"	A17	Adjust to place sound markers as shown in fig. 6. The video marker should be at 50%.
			201MC (10MC SWP)	199.25MC 203.75MC	11		A18	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A19	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A20	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A21	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A22	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A23	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A24	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A25	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A26	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A27	

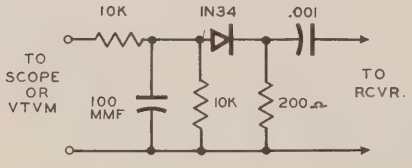


FIG. 1

FIG. 2

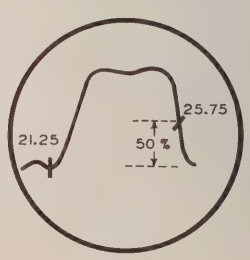


FIG. 3

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set the pointer to the last dot near the left hand end of the dial backplate.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
13.	..1MFD.	High side to pin 1, (Grid) of 6BJ6, (V18). Low side to B-.	455KC (400% Mod.)		Tuning gang fully open.	Across voice coil.	A28, A29 A30, A31	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation
14.		Loop	1620KC		"	"	A32	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
15.		Loop	1400KC		Tune for max. deflection.	"	A33	"

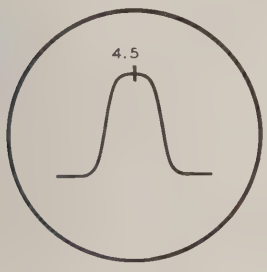


FIG. 4

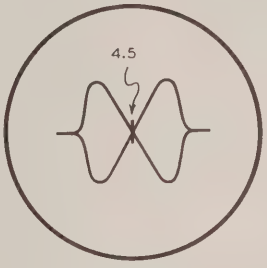


FIG. 5

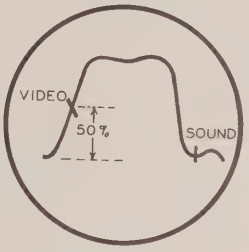


FIG. 6

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-1VDC	0V	105VDC	110VDC	95VDC	95VDC	0V		
V 2	6J6	70VDC	85VDC	90VDC	100VDC	-1.4VDC	§-3.6VDC	0V		
V 3	6AU6	-.4VDC	0V	36VAC	28VAC	110VDC	110VDC	.8VDC		
V 4	6AU6	▲-.2VDC	▲1.2VDC	28VAC	21VAC	▲110VDC	▲110VDC	▲1.2VDC		
V 5	6AU6	▲-.2VDC	▲1.2VDC	21VAC	13VAC	▲110VDC	▲110VDC	▲1.2VDC		
V 6	12AT7	100VDC	-.2VDC	0V	1.2VAC	1.2VAC	115VDC	32VDC	34VDC	7.4VAC
V 7	12AU7	250VDC	-1.3VDC	8.9VDC	13VAC	13VAC	16VDC	-1.3VDC	0V	7.4VAC
V 8	6AU6	▲-.1VDC	▲1.1VDC	8.1VAC	15VAC	▲110VDC	▲110VDC	▲1.1VDC		
V 9	6AU6	▲-1VDC	▲0V	15VAC	22VAC	▲37VDC	▲37VDC	▲0V		
V 10	6S8GT	-.8VDC	0V	-.8VDC	-.3VDC	.2VDC	85VDC	1.1VAC	8.1VAC	Top Cap -.5VDC
V 11	25L6GT	0V	47VAC	65VDC	75VDC	0V -6VDC	0V -19VDC	75VAC	3.5VDC	
V 12	12BH7	410VDC	§-22VDC	0V	36VAC	47VAC	12VDC 28VDC	§-.7VDC	2.8VDC 5VDC	41VAC
V 13	12SN7GT	§-90VDC	220VDC	0V	§-34VDC	110VDC 180VDC	-24VDC	22VAC	35VAC	
V 14	19BG6G	0V	35VAC	0V	-23VDC	-23VDC	0V	56VAC	255VDC	Top Cap *
V 15	25W4GT	0V	0V	420VDC	0V	255VDC	0V	56VAC	75VAC	
V 16	1X2A	* DO NOT MEASURE								Top Cap *
V 17	12LP4A	0V	1.8VDC	Pin 10 410VDC	Pin 11 15VDC 115VDC	Pin 12 1.2VAC		H.V. Connector * * 8 K.V.		

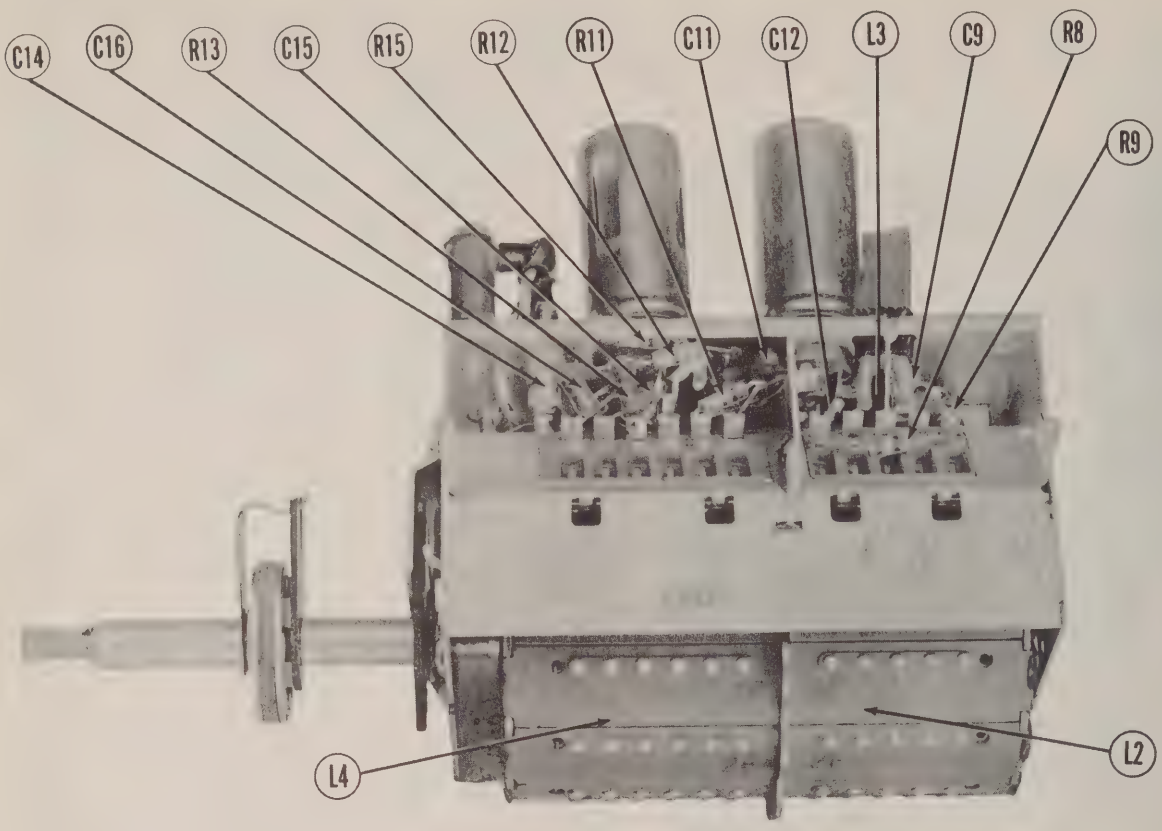
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
▲ MEASURED FROM PIN 7 OF V9.
■ MEASURED FROM -125VDC LINE.
* DO NOT MEASURE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
* * USE EXTREME CAUTION WHEN MEASURING THIS VOLTAGE.

RESISTANCE READINGS

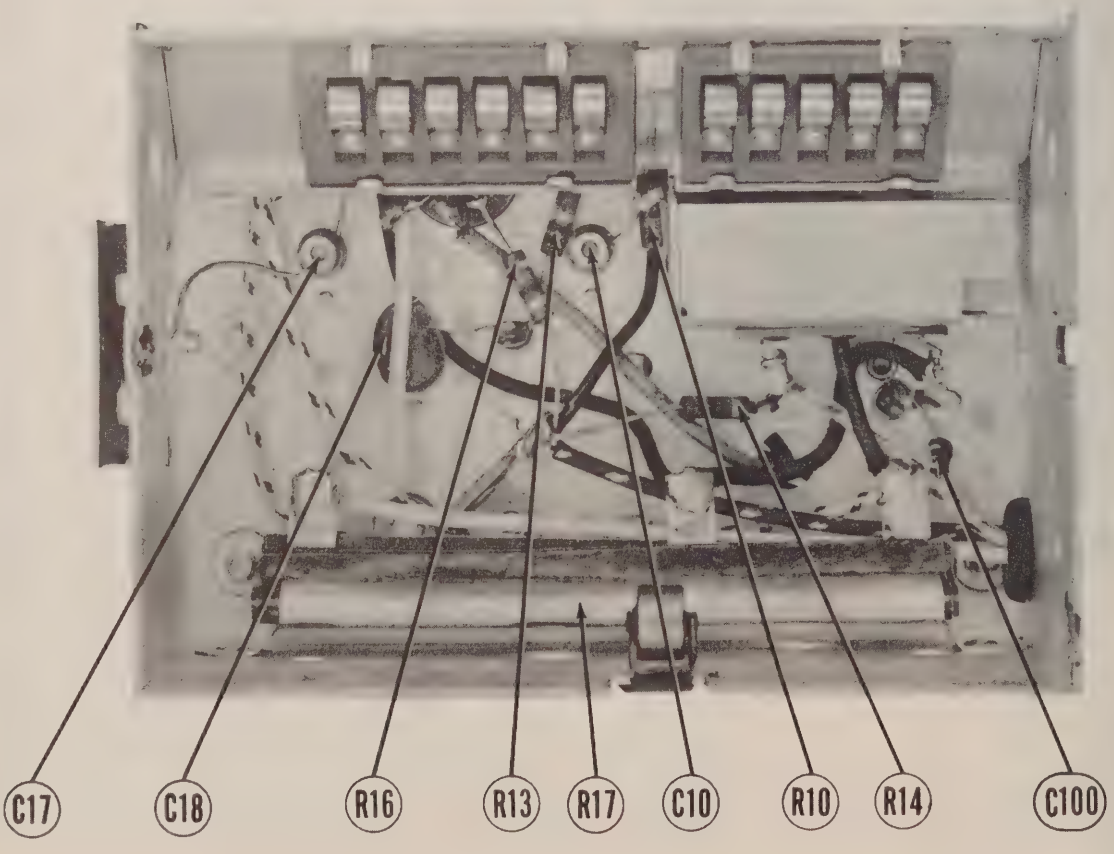
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	■1.2Meg	0Ω	8Ω	12Ω	▲2.3KΩ	▲2.3KΩ	0Ω		
V 2	6J6	▲4.8KΩ	▲10KΩ	5Ω	8Ω	220KΩ	10KΩ	0Ω		
V 3	6AU6	■1.1Meg	3Ω	16Ω	14Ω	▲620Ω	▲620Ω	85Ω		
V 4	6AU6	▲620Ω	▲300Ω	14Ω	11Ω	†545Ω	†545Ω	▲300Ω		
V 5	6AU6	▲620Ω	▲300Ω	11Ω	7Ω	†545Ω	†545Ω	▲300Ω		
V 6	12AT7	†20KΩ	▲1 Meg	0Ω	1.7Ω	1.7Ω	†33KΩ	■30KΩ	■27KΩ	4.6Ω
V 7	12AU7	†5.6KΩ	1Meg	5KΩ	7Ω	7Ω	†25KΩ	3.3Meg	0Ω	4.6Ω
V 8	6AU6	▲1.1Meg	▲300Ω	6Ω	9Ω	†545Ω	†545Ω	▲300Ω		
V 9	6AU6	▲100KΩ	▲0Ω	9Ω	11Ω	†68KΩ	†68KΩ	▲0Ω		
V 10	6S8GT	100KΩ	0Ω	100KΩ	■1.1Meg	200KΩ	†470KΩ	1.8Ω	6Ω	Top Cap 4.7Meg
V 11	25L6GT	0Ω	21Ω	†3.8KΩ	†3.6KΩ	500KΩ 470KΩ	30KΩ 0KΩ	29Ω	6Ω	
V 12	12BH7	#2.5KΩ	■1Meg	0Ω	16Ω	20Ω	†5.7Meg †2.7Meg	100KΩ	168KΩ 68KΩ	19Ω
V 13	12SN7GT	250KΩ	#80KΩ	0Ω	1.1Meg	†100KΩ †75KΩ	300KΩ	11Ω	20Ω	
V 14	19BG6G	Inf.	20Ω	0Ω	1Meg	1Meg	Inf.	26Ω	†75Ω	Top Cap #70KΩ
V 15	25W4GT	Inf.	Inf.	200KΩ	Inf.	†90Ω	Inf.	26Ω	34Ω	
V 16	1X2A	PINS 1-9 HAVE INF. RESISTANCE.								Top Cap #940KΩ
V 17	12LP4A	0Ω	1Meg	Pin 10 #4.7KΩ	Pin 11 †100KΩ †40K	Pin 12 1.8Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
† MEASURED FROM OUTPUT OF M2.
# MEASURED FROM PIN 3 OF V15.
▲ MEASURED FROM PIN 7 OF V9.
■ MEASURED FROM -125VDC LINE.

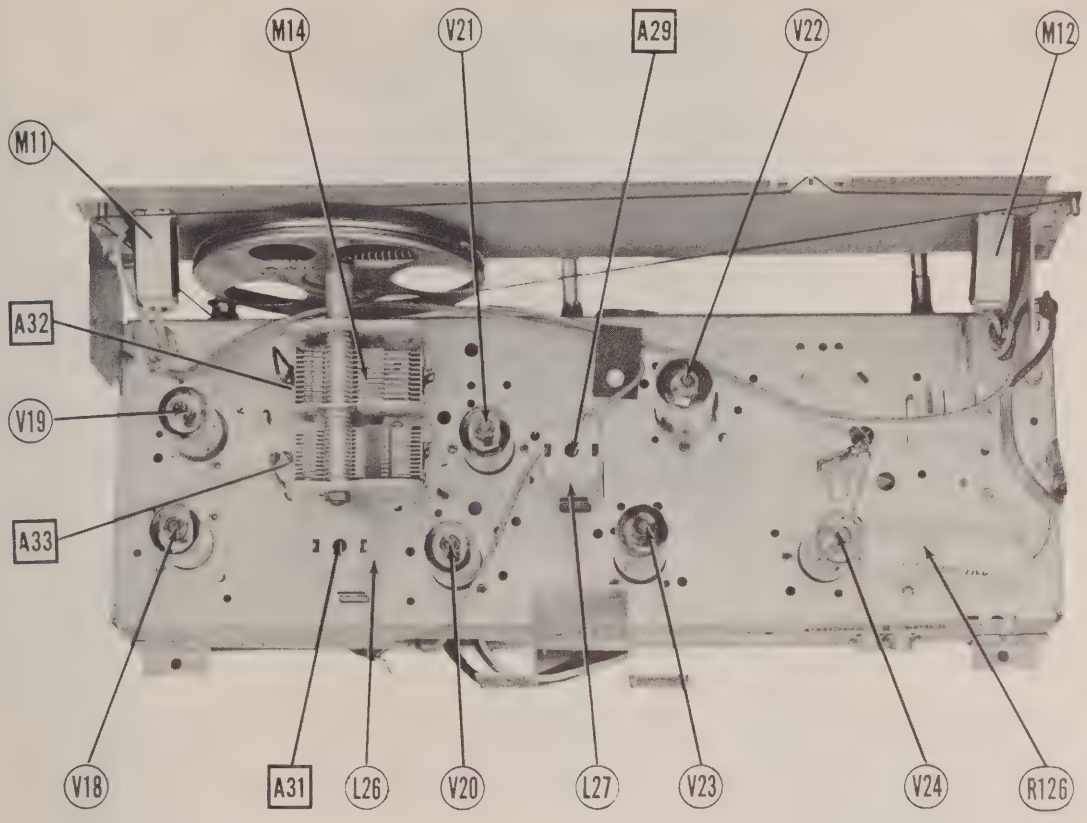
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



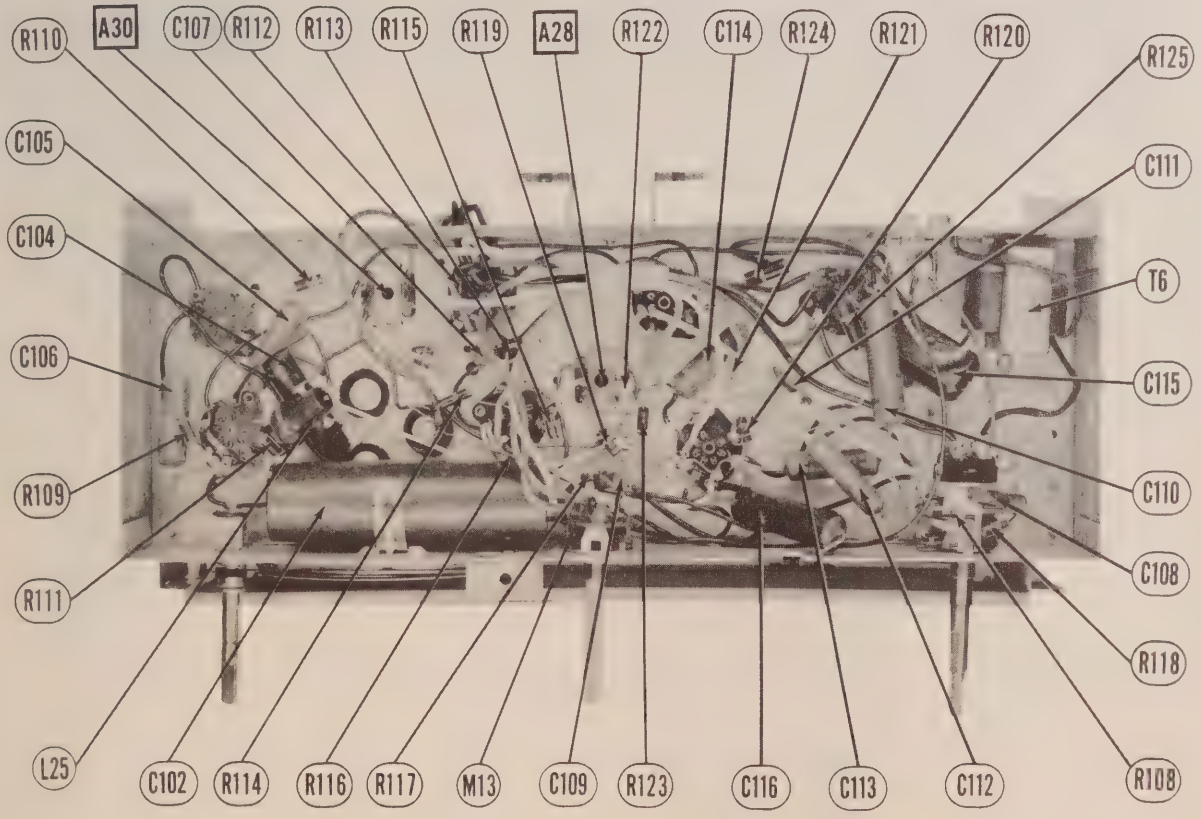
RF TUNER-RIGHT SIDE



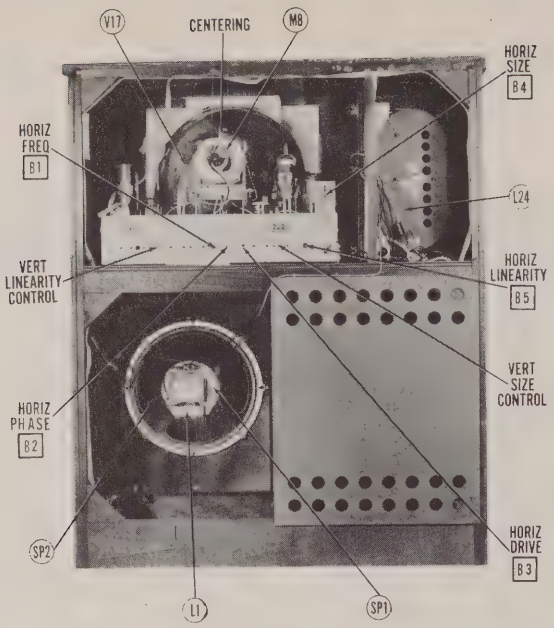
RF TUNER-BOTTOM VIEW



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Connect a short across the phasing coil L21.
Turn the horizontal hold control to maximum counterclockwise.
Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.
Remove the short from L21 and connect the vertical input lead of an oscilloscope through a 10KΩ resistor, to the junction of L20 and L21.
Adjust the phase slug, (B2), until the broad and narrow peaks of the wave form on the scope are of equal height as shown in figure 7. If necessary during adjustment of B2, adjust B1 to keep the picture synchronized.
Momentarily interrupt the signal by switching to another channel and back again. The picture should be out of synchronization and show 4 or 5 sloping black bars. If more or less than 4 or 5 bars are present, adjust B1 until 4 or 5 bars are present.
Turn the hold control slowly clockwise. The picture should synchronize after 1/4 turn, and thereafter remain in synchronization over the entire range of the hold control.
Adjust the horizontal drive trimmer, (B3), counter clockwise as far as possible without crowding or bright vertical lines appearing in the picture.
Adjust the horizontal size slug, (B4), until the picture is slightly wider than necessary to fill the mask horizontally.
Adjust the horizontal linearity slug, (B5), until the picture is symmetrical from left to right.
Slight readjustment of B3 may be necessary for optimum results.

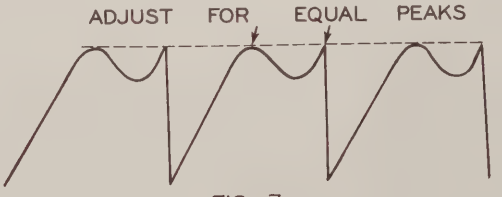


FIG. 7

DISASSEMBLY INSTRUCTIONS

TELEVISION CHASSIS REMOVAL:

1. Remove four push-on type control knobs.
2. Remove nine wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker.
5. Disconnect radio power plug.
6. Remove four 7/16" hex head bolts from chassis. Remove chassis.
7. Remove four 5/16" hex nuts from speaker. Remove speaker.

RADIO CHASSIS REMOVAL:

1. Remove three push-on type control knobs.
2. Disconnect phono input jack.
3. Disconnect phono power plug.
4. Disconnect speaker leads.
5. Remove three wing bolts from radio chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		EMERSON PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	800535	6AG5	7BD	
V2	Converter	800536	6J6	7BF	
V3	1st. Video IF Amp.	800533	6AU6	7BK	
V4	2nd. Video IF Amp.	800533	6AU6	7BK	
V5	3rd. Video IF Amp.	800533	6AU6	7BK	
V6	1st. Video Amp.-1st. Sync. Amp.	800047	12AT7	9A	
V7	2nd. Video Amp.-Sync. Sep. Sep.	800026	12AU7	9A	
V8	Sound IF Amp.	800533	6AU6	7BK	
V9	Limiter	800530	6AU6	7BK	
V10	Discr-AF Amp.-AGC	800015	6S8GT	8CB	
V11	Audio Output	800490	25L6GT	7AC	
V12	Vert. Multivibrator-Vert. Amplifier	800053	12BH7	9A	
V13	Horiz. AFC-Horiz. Oscillator	800039	12SN7	8BD	
V14	Horiz. Output	800044	19BG6GT	5BT	
V15	Damper	800045	25W4GT	4CG	
V16A	HV Rectifier		1X2A	7CB	
B	HV Rectifier	800046	1X2	7CB	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	EMERSON PART No.	SYLVANIA PART No.	THOMAS PART No.		
V17A	12LP4A	12LP4A	12LP4A	12D	
B	12LP4	12LP4A	12LP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	200	150	925166-1	E4A78		UPE101015		TVL-1431	Voltage Doubler
C2A	120	300	925166-3	AFH3-102		UPT305		TVL-3765	▲ Filter
B	15	450							■ Vert. Amp. Dec.
C	10	450							▲ Acc. Anode Decoupling
C3A	120	300	925181	E4C245		UPT125430		TVL-3585	▲ Filter
B	50	300							■ Filter
C	40	300							▲ Audio Output Dec.
C4	30	150	925070-1	PRS150/30		BR3015A		TVA-1412	Bias Filter
C5	30	150	925070-1	PRS150/30		BR3015A		TVA-1412	Bias Filter
C6	4	200	925070-2	PRS450/4		BR425		TVA-1501	Video Amp. Cathode
C7	1500		928006	SI1500	D6-152		GP2L-152	5HK-D15	RF Coupling
C8	1500		928006	SI1500	D6-152		GP2L-152	5HK-D15	RF Coupling
C9	3-9				829-10				Variable Trimmer
C10	.5-3				829-3				Variable Trimmer
C11	120			SI120	D6-121		GP2K-121	5GA-T12	RF Amp. Decoupling
C12	1000			BPD-001	DD-102		801-001	5HK-D1	RF Amp. Fil.
C13	100			SI100N750	TCN-100			5TCU-T1	RF Coupling
C14	.5-3				829-3				Variable Trimmer
C15	20			SI20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C16	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C17	.5-3				829-3				Variable Trimmer
C18A	1000			BPD-2X001	DD-2-102		812-001	5HK-2D1	RF Bypass
B	1000								Conv. Fil.
C19	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C20	1000			SI1000	D6-102		GP2L-102	5HK-D1	Conv. Decoupling
C21	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	Tuner Isolation ††
C22	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	AGC Filter
C23	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C24	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	1st. Video IF Dec.
C25	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	1st. Video IF Fil.
C26	2	50	923201	P282-2					AGC Filter
C27	.2	400	923091	684-2		GT4P2		4TM-P22	AGC Filter
C28	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	2nd. Video IF Grid Dec.
C29	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	2nd. Video IF Dec.
C30	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	2nd. Video IF Cathode
C31	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	2nd. Video IF Fil.
C32	62				TCN-62		N750K-620		Fixed Trimmer
C33	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	3rd. Video IF Grid Dec.
C34	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	3rd. Video IF Dec.
C35	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	3rd. Video IF Cathode
C36	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	3rd. Video IF Fil.
C37	10	500	928002	1469-00001		5R5Q1		MS-41	Fixed Trimmer
C38	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C39	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C40	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Video Amp. Fil.
C41	200	500	910047	1468-0002	D6-201	5W5T2	GP2K-201	1FM-32	Video Coupling
C42	.05	400	923062	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C43	47	500		1469-00005		5R5Q5		MS-45	Fixed Trimmer
C44	.05	400	923062	P488-05	DF-503	PTE6S5		4TM-S5	Video Coupling
C45	.002	600	923088	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Picture Tube Cathode
C46	5		928023	SI5NP0	TCZ-4.7		NP0K-050		Sound IF Coupling
C47	.01	200	923076	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C48	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Sound IF Cathode
C49	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Sound IF Fil.
C50	47	500	915000-1	1469-00005		5R5Q5		MS-45	Fixed Trimmer
C51	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C52	47	500	910033	1469-00005	D6-470	5R5Q5	GP1K-470	MS-45	Sound IF Coupling
C53	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Limiter Decoupling
C54	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Limiter Cathode
C55	110	500	910043						RF Bypass
C56	.001	600	923079	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	De-emphasis
C57	.01	400	923061	P488-01	D6-102	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C58	.002	600	923088	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Audio Coupling

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C59	1500		928006	SI1500	D6-152	1WSD15	GP2L-152	5HK-D15	RF Bypass
C60	.01	400	923081	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C61	.01	400	923061	P486-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Output Plate
C62	200	500	910474	1468-0002	D6-201	5W5T2	GP2K-201	1FM-32	Sync. Coupling
C63	.01	600	922033	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Sync. Coupling
C64	.05	400	923062	P488-05	DF-503	PTE4S5		4TM-S5	Sync. Coupling
C65	.001	600	923079	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Integrator Net.
C66	.002	600	923088	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Vert. Integrator Net.
C67	.005	400	923092	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Vert. Integrator Net.
C68	.001	600	923079	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Sync. Coupling
C69	1000	500	922021	1464-001		1R5D1		MS-21	Vert. Feedback
C70	.22	400		P488-22		GT4P2		4TM-P22	Vert. Osc. Cathode ¶
C71	.22	400		P488-22		GT4P2		4TM-P22	Vert. Osc. Cathode *
C72	.022	1000		P1088-022		PTE16S2		MB-S22	Vert. Discharge †
C73	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Vert. Discharge *
C74	.1	600	922008	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C75	.1	200	923069	P288-1	DF-104	PTE4P1		2TM-P1	Vert. Output Grid
C76	.002	600	923088	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Vert. Sweep Coupling
C77	180	500	910043-2	1469-0002	D6-181	5R5T2	GP2K-181	MS-32	Horiz. Sync. Coupling
C78	.002	600	923088	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Horiz. Sync. Coupling
C79	220	500	910028	1469-00025		5R5T25			Voltage Divider
C80	.02	600	923114	P488-02	DF-203	PTE6S2		6TM-S2	AFC Filter
C81	.2	200	923091	P488-22		GT4P2		2TM-P22	AFC Filter
C82	.05	400	923062	P488-05	DF-503	PTE4S5		4TM-S5	AFC Plate
C83	200	500	910047	1469-0002		5R5T2		MS-32	Horiz. Osc. Grid
C84	.01	600	922041	P488-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Fixed Trimmer
C85	1200	500	910044						Horiz. Discharge
C86	390	500	910212	1469-0004		5R5T4		MS-34	Horiz. Sweep Coupling
C87	.005	1600		P1688-005		PTE16D5		MB-D5	Horiz. Sweep Coupling †
C88	680	1000	928054						Fixed Trimmer
C89	.5	200	923102	P288-5		GT2P5		2TM-P5	Horiz. Sweep Coupling
C90	5	1000	910045						Horiz. Feedback
C91	.047	600	922023	P688-047	DF-503	PTE6S5		6TM-S47	Damper Filter
C92	.022	1000		P1088-022		PTE16S2		MB-S22	Damper Filter †
C93	.1	600	922008	P688-1	DF-104	PTE6P1		6TM-P1	Damper Filter *
C94	500	2000	923015	HV20C	TV3-502				HV Filter *
C95	.047	400	922101	P488-047	DF-503	PTE4S5		4TM-S47	RF Bypass
C96	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C97	.047	400	922101	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter
C98	1500		928006	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	RF Bypass
C99	.1	600	923064	P688-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C100	1000			SI1000	D6-102		GP2L-102	5HK-D1	RF Amp. Fil. *
C101	.001	400	923079	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	RF Amp. Plate *

* Not used in all models.
† Some models use .033MFD. in this application. (Mfgrs. Part # 922024)
‡ Some models use .002MFD. in this application. (Mfgrs. Part # 923088)
¶ Some models use .1MFD. in this application (Mfgrs. Part # 922014)
†† Some models use .500MMF. in this application. (Mfgrs. Part # 928006)

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½		Concentrikit B17-114 ♁			Contrast Control - Front
B	1Meg	½	390165	B13-137 ♁	RTV-294		Volume Control - Rear
C	Shaft end			E-187 ♁			Attach Per Instructions in Concentrikit
D	Switch			76-2			Attach Per Instructions in Concentrikit
R2A	100KΩ	½	390162	Q11-128	AG-49-5	B-40	Focus Control - See Note 1
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R2A per instructions
R3A	100KΩ	½	390162	Q11-128	AG-49-5	B-40	Brightness Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R3A per instructions
R4A	100KΩ	½	390162	Q11-128	AG-49-5	B-40	Vert. Hold Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R4A per instructions
R5A	100KΩ	½	390162	Q11-128	AG-49-5	B-40	Horiz. Hold Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R5A per instructions
R6A	100KΩ	½	390132	Q11-128	AG-49-5	AN-40	Vert. Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7A	3Meg	½	390138	Q11-140	AM-85-5	AN-84	Vert. Size Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R7A per instructions

♁ Additional parts to be used with Concentrikit.
Note 1 Some sets mount this unit on rear of chassis. If so, part number becomes 390132.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R8	3900Ω	½		BTS-3900	Antenna Coil Shunt
R9	47KΩ	20% ½		BTS-47K	AGC Network
R10	2200Ω	20% ½		BTS-2200	RF Amp. Decoupling
R11	10KΩ	½		BTS-10K	RF Coil Shunt
R12	4700Ω	½		BTS-4700	Mixer Grid
R13	220KΩ	20% ½		BTS-220K	Mixer Grid
R14	10KΩ	½		BTS-10K	Mixer Plate Decoupling
R15	10KΩ	½		BTS-10K	Osc. Grid
R16	4700Ω	½		BTS-4700	Osc. Plate
R17A	40Ω	10			Filament Dropping - Wire Wound
B	20Ω				Filament Dropping - Wire Wound
R18	10Ω	5		1 3/4A-10	Filament Dropping - Wire Wound
R19	470Ω	½	350412	BTS-470	AGC Network
R20	5600Ω	½	340672	BTS-5600	1st. Video IF Transformer Shunt
R21	82Ω	½	340232	BTS-82	1st. Video IF Amp. Cathode
R22	470Ω	½	350412	BTS-470	1st. Video IF Amp. Decoupling
R23	470Ω	½	350412	BTS-470	2nd. Video IF Amp Grid
R24	10KΩ	½	340732		2nd. Video IF Transformer Shunt
R25	150Ω	20% ½	340292	BTS-150	2nd. Video IF Amp. Cathode
R26	470Ω	½	350412	BTS-470	2nd. Video IF Amp. Decoupling
R27	470Ω	½	350412	BTS-470	3rd. Video IF Amp Grid
R28	10KΩ	½	340732	BTS-10K	Trap Coil Shunt
R29	10KΩ	½	340732		3rd. Video IF Transformer shunt
R30	150Ω	20% ½	340292	BTS-150	3rd. Video IF Amp. Cathode
R31	470Ω	½	350412	BTS-470	3rd. Video IF Amp. Decoupling

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
R32	10KΩ	½	340732		4th. Video IF Transformer Shunt
R33	4700Ω	20% ½	340852	BTS-4700	Video Det. Diode Load
R34	27KΩ	1	370832	BTA-27K	1st. Video Amp. Cathode
R35	33KΩ	1	340852	BTS-33K	1st. Video Amp. Plate
R36	2200Ω	½	340572	BTS-2200	Isolation
R37	2200Ω	½	340572	BTS-2200	Decoupling
R38	1Meg	20% ½	351212	BTS-1Meg	2nd. Video Amp. Grid
R39	5600Ω	1	370672	BTA-5600	2nd. Video Amp. Plate
R40	15KΩ	½	340772	BTS-15K	Video Peaking Coil Shunt
R41	150KΩ	½	341013	BTS-150K	Voltage Divider
R42	15KΩ	20% ½	340772	BTS-15K	Voltage Divider
R43	1Meg	20% ½	351212	BTS-1Meg	Picture Tube Grid
R44	22KΩ	½	340812	BTS-22K	Picture Tube Cathode
R45	150KΩ	½	341012	BTS-150K	Vert. Retrace Blanking Network
R46	150Ω	20% ½	341012	BTS-150	Sound IF Amp. Cathode - See Note 3
R47	1Meg	20% ½	351212	BTS-1Meg	Sound IF Amp. Grid
R48	100KΩ	½	340972	BTS-100K	Limiter Grid
R49	68KΩ	½	340932	BTS-68K	Limiter Decoupling
R50	100KΩ	½	340972	BTS-100K	Disc. Diode Load
R51	100KΩ	½	340972	BTS-100K	Disc. Diode Load
R52	68KΩ	½	340932	BTS-68K	De-emphasis
R53	4.7Meg	20% ½	351372	BTS-4.7Meg	AF Amp. Grid - See Note 4
R54	470KΩ	½	351132	BTS-470K	AF Amp. Plate
R55	470KΩ	½	351132	BTS-470K	Output Grid
R56	68Ω	½	340212	BW-½-68	Output Cathode
R57	10KΩ	½	340732	BTS-10K	Isolation
R58	330KΩ	20% ½	341092	BTS-330K	Isolation
R59	3.3Meg	½	341332	BTS-3.3Meg	Sync. Sep. Grid
R60	220KΩ	½	341052	BTS-220K	Sync. Sep. Plate
R61	22KΩ	½	340812	BTS-22K	Voltage Divider
R62	1Meg	20% ½	351212	BTS-1Meg	Sync. Amp. Grid
R63	15KΩ	2	397066	BTB-15K	Sync. Amp. Plate
R64	4700Ω	½	340652	BTS-4700	Sync. Amp. Plate
R65	22KΩ	½	340812	BTS-22K	Integrator
R66	22KΩ	½	340812	BTS-22K	Integrator
R67	33KΩ	½	340852	BTS-33K	Integrator
R68	100KΩ	½	340972	BTS-100K	Vert. Osc. Grid
R69	68KΩ	½	340932	BTS-68K	Vert. Osc. Cathode
R70	2.7Meg	½	341312	BTS-2.7Meg	Vert. Osc. Plate
R71	100KΩ	½	340972	BTS-100K	Vert. Feedback
R72	1Meg	20% ½	351212	BTS-1Meg	Vert. Amp. Grid
R73	1500Ω	20% ½	340532	BTS-1500	Vert. Amp. Decoupling
R74	22KΩ	½	340812	BTS-22K	Vert. Linearity Control Shunt
R75	22KΩ	½	340812	BTS-22K	Bias Network
R76	100KΩ	½	340972	BTS-100K	Bias Network
R77	8200Ω	½	340712	BTS-8200	Bias Network
R78	820KΩ	5%	331192	BTS-820K-5%	Horiz. AFC Grid
R79	150KΩ	5%	331012	BTS-150K-5%	Horiz. AFC Cathode
R80	150KΩ	5%	331012	BTS-150K-5%	Horiz. AFC Cathode
R81	82KΩ	½	340952	BTS-82K	Horiz. AFC Plate
R82	8200Ω	½	340712	BTS-8200	Horiz. AFC Filter
R83	150KΩ	½	341012	BTS-150K	Voltage Divider
R84	2.7Meg	½	341312	BTS-2.7Meg	Voltage Divider
R85	100KΩ	5% ½	330972	BTS-100K-5%	Horiz. Osc. Grid
R86	75KΩ	5% ½	330942		Horiz. Osc. Plate
R87	8200Ω	½	340712	BTS-8200	Horiz. Osc. Coil Shunt
R88	22KΩ	½	340812	BTS- 22K	Horiz. Osc. Coil Shunt
R89	150KΩ	5% ½	331012	BTS-150K-5%	Horiz. Feedback
R90	47KΩ	½	340892	BTS-47K	Horiz. Feedback
R91	220KΩ	½	341052	BTS-220K	Horiz. Feedback
R92	4700Ω	½	340652	BTS-4700	Decoupling
R93	120Ω	½	340272	BTS-120	Parasitic Suppressor
R94	1Meg	20% ½	351212	BTS-1Meg	Horiz. Output Grid
R95	470KΩ	1	381132		Current Limiting
R96	470KΩ	1	381132		Current Limiting - See Note 2
R97	470KΩ	1	381132		HV Filter - See Note 2
R98	1500Ω	5	394060-2	1 3/4A-1500	Decoupling - Wire Wound
R99	2200Ω	20% ½	340572	BTS-2200	Bias Filter
R100	220Ω	½	340332	BTS-220	Filament Shunt
R101	75Ω	10	394060-3	1 3/4A-75	Filament Dropping - Wire Wound
R102	55Ω	10	394060-4		Filament Dropping - Wire Wound
R103	220KΩ	½	341052	BTS-220K	Isolation
R104	68KΩ	½	340932	BTS-68K	AGC Network
R105	1Meg	20% ½	351212	BTS-1Meg	AGC Network
R106	470Ω	½	350412	BTS-470	Sound IF Amp. Decoupling - See Note 2
R107	150Ω	20% ½	340292	BTS-150	Limiter Cathode - See Note 2

Note 2 Not used in all models.
Note 3 Some models use 82Ω resistor in this application.
Note 4 Some models use parallel resistors in this application to obtain desired value.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T1	1070Ω		738054		A-3037		Vert. Output Trans.
	Tap 20Ω						
T2	38Ω	335Ω	738039		HVO-6		Horiz. Output Trans.
		SEC. 2					
		22Ω Taps 11Ω & 17Ω					
		SEC. 3					
		0Ω					
T3 A	12.3Ω		708036	DY-1	MDF-70		Horiz. Deflection Coils
B	65Ω						Vert. Deflection Coils
T4	2.1KΩ		708048				Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T5	1.98KΩ	3.4Ω	230Ω	1Ω	734058-1	A-3878 ①	A-2928 ①	RO-2 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA EMERSON PART No.	VIKING PART No	QUAM PART No.	NOTES
SP1	PM	3.4Ω	180076	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11½"					

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.170ADC	75Ω	2 Henries		C-2325	C-2974	TR-3300 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	MEISSNER PART No.	IRC PART No.	NOTES
L2	Ant. Coil						Part of Tuner Part # 470636
L3	Fil. Choke						Part of Tuner Part # 470636
L4	RF, Mixer Grid & Osc. Coil						Part of Tuner Part # 470636
L5	Conv. Plate Coil	.6Ω	.1Ω	702104-1			
L6	1st. Video IF	.7Ω	.1Ω	702104-1			
L7	RF Choke	3Ω		705016		CLA	3.3 Microhenries
L8	2nd. Video IF	.4Ω	.4Ω	720098			Includes Trap .1Ω
L9	3rd. Video IF	.4Ω	.4Ω	720106			
L10	4th. Video IF	.4Ω	.4Ω	720098			
L11	RF Choke	3Ω		705016		CLA	3.3Microhenries
L12	Peaking	6Ω		708090	19-1920		80 Microhenries
L13	4.5MC Trap	2Ω		708032			
L14	Peaking	10Ω		708095	19-1921		180 Microhenries
L15	Peaking	17Ω		708114	19-1923		440 Microhenries
L16	Peaking	6Ω		708090	19-1920		80 Microhenries
L17	1st. Sound IF	4Ω		708093			
L18	2nd. Sound IF	1.6Ω		708032-1			
L19	Disc. Trans.	1.7Ω	1.6Ω	708018			Tap .8Ω
L20	Horiz. Osc.	90Ω	38Ω	716052			
L21	Horiz. Wave Form Coil	59Ω		738037			
L22	Size Coil	45Ω		708055			
L23	Horiz. Lin.	29Ω		708052			

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA EMERSON PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M1	.150ADC	817015	NF-5	6Q1	
M2	.150ADC	817015	NF-5	6Q1	
M3	.010ADC	817000-1		8Y1	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA EMERSON PART No. FUSE	EMERSON PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M4	3AG Pigtail	.250	808170		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M5	RF Tuner	470636	
M6	Crystal	817018	IN60
M7	Ballast Tube	397036	
M8	Ion Trap	708061	
A6	Trimmer	900064	3-35MMF (1st Sound IF)
B3	Trimmer	900073	45 400MMF (Horizontal Drive)

EMERSON MODEL 665-B
(Ch. 120131-B and RADIO Ch. 120130-B)

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		EMERSON PART No.	STANDARD REPLACEMENT		
V18	RF Amplifier				
	Mixer	800023	6BJ6	7CM	
V19	Oscillator	800023	6BJ6	7CM	
V20	1st. IF Amplifier	800023	6BJ6	7CM	
V21	2nd. IF Amplifier	800023	6BJ6	7CM	
V22	Detector-AVC-AF				
	Amplifier	800523	12AT6	7BT	
V23	Power Output	800032	50C5	7CV	
V24	Rectifier	800526	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C102A	50	150	925195			EDL8415		R1137	*Filter
B	80	150				BRH251A			Filter
C	100	25							Output Cathode
C103	2.2				TCZ-2.2		NP0K-2R2		RF Coupling
C104	.05	400	920030	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C105	.02	400	920020	P488-02	DF-203	PTE4S2		4TM-S2	RF Amp. Screen
C106	.02	400	920020	P488-02	DF-203	PTE4S2		4TM-S2	RF Amp. Cathode
C107	212		928104	SI220	D6-221	5R5T25	GP2K-221	5GA-T22	IF Coupling
C108	212		928104	SI220	D6-221	5R5T25	GP2K-221	5GA-T22	Tone Comp.
C109	1000		928003	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Tone Comp.
C110A	.05	400	920030	P488-05	DF-503	PTE4S5		4TM-S5	Phono Isolation
B	220		♦470310	SI220	††PC-150	5W5T25	GP2K-221	♦34C3	Diode RF Tiler
C	.002			P688-002		PTE6D2	GP2-333-202		Audio Coupling
D	220			SI220		5W5T25	GP2K-221		AF Amp. Plate
C111	.005			P688-005		PTE6D5	GP2-333-502		Audio Coupling
C112	.002	600	920545	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Tone Comp.
C113	.02	400	920020	P488-02	DF-203	PTE4S2		4TM-S2	Tone Comp.
C114	.02	400	920020	P488-02	DF-203	PTE4S2		4TM-S2	Output Plate
C115	.05	400	922101	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C116	.1	200	920040	P288-1	DF-104	PTE4P1		2TM-P1	Line Isolation

♦ Items C109A, C109B,
♦ Items C111A, C111B, C111C, C111D are cob
♦ Items C111A, C111B, C111C, C111D are combined into one unit.
† † This part number will replace C111A, C111B, C111C, C111D, R120, R121, R122.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R108A	500KΩ	½	390166	Concentrikit			Tone Control - Front
B	500KΩ	½		B11-133 ♦	RTV-295		Volume Control - Tapped @ 100KΩ - Rear
				B13-133X ♦			
C	Shaft end			E-187 ♦			Attach per instructions in Concentrikit
D	Switch			76-2 ♦			Attach per instructions in Concentrikit

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	EMERSON PART No.	IRC PART No.	
R109	1000Ω	½	340492	BTS-1000	RF Amp. - Mixer Cathode
R110	220KΩ	½	341050	BTS-220K	RF Amp. - Mixer Screen
R111	22KΩ	½	340812	BTS-22K	Osc. Grid
R112	220Ω	½	340332	BTS-220	1st. IF Amp. Cathode
R113	3900Ω	1	340632	BTA-3900	1st. IF Amp. Plate
R114	100KΩ	½	350970	BTS-100K	2nd. IF Amp. Grid
R115	120Ω	½	340272	BTS-120	2nd. IF Amp. Cathode
R116	3.3Meg	½	351330	BTS-3.3Meg	AVC Network
R117	220KΩ	½	341050	BTS-220K	Tone Compensation
R118	10KΩ	½	340732	BTS-10K	Tone Compensation
R119	47KΩ	½	340890	BTS-47K	Diode Filter
R120	10Meg	½	351450	BTS-10Meg	AF Amp. Grid
R121	470KΩ	½	351130	BTS-470K	AF Amp. Plate
R122	470KΩ	½	351130	BTS-470K	Output Grid
R123	150Ω	½	340292	BTS-150	Output Cathode
R124	1000Ω	1	370490	BTA-1000	Filter
R125	22Ω	1	370092		Rectifier Ballast
R126	720Ω	20	394111		Series Pilot Lights - Wire Wound

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T6	1.89KΩ	3.4Ω	190Ω Tap 7Ω	1.7Ω	734063	A-3330 ①	A-3031 ①	RO-2①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	EMERSON PART No.	MEISSNER PART No.	
L24	Loop Ant.	1.5Ω		700054		Includes 2.2MMF Capacitor.
L25	Osc. Coil	5.5Ω	.8Ω	716063		
L26	1st. IF	19Ω	19Ω	720033		
L27	2nd. IF	19Ω	19Ω	720125		

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	EMERSON PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M9		LT-4-AG	D-AG	W66B	A66U	73	O-2 or S-2	

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	EMERSON PART No.	WALCO PART No.	
M10		W-30AGA	

DIAL LIGHTS

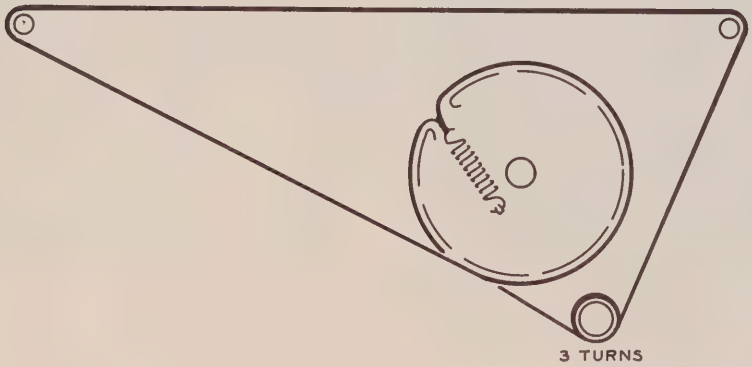
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					EMERSON PART No.		
M11	Bayonet	6-8	.15	Brown	807000		Type # 47
M12	Bayonet	6-8	.15	Brown	807000		Type # 47

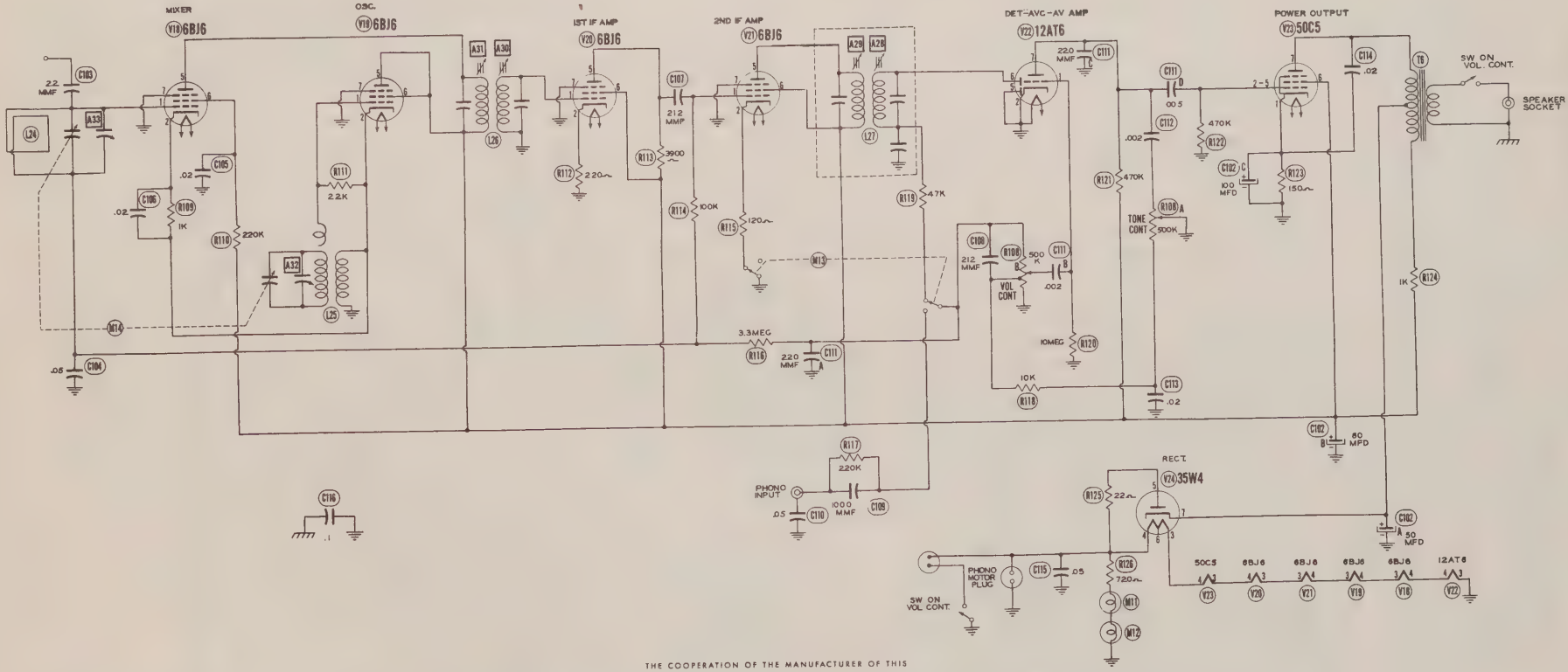
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M13	Switch	510077	Radio-Phono
M14	Tuning Cap	900079	(18-397MMF, 30-186MMF)

DIAL CORD STRINGING

TUNING GANG FULLY CLOSED





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V18	6BJ6	-1.1VDC	.7VDC	18VAC	12VAC	95VDC	53VDC	0V
V19	6BJ6	8-10.1VDC	0V	24VAC	18VAC	95VDC	95VDC	0V
V20	6BJ6	0V	1.7VDC	30VAC	36VAC	75VDC	95VDC	0V
V21	6BJ6	-.8VDC	.3VDC	30VAC	24VAC	95VDC	95VDC	0V
V22	12AT6	-.8VDC	0V	0V	12VAC	0V	-1.8VDC	48VDC
V23	50C5	6.1VDC	0V	36VAC	85VAC	0V	95VDC	110VDC
V24	35W4	117VAC	120VDC	85VAC	117VAC	110VAC	105VAC	120VDC

† TAKEN WITH VACUUM TUBE VOLTMETER

ALL MEASUREMENTS TAKEN IN AM POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V18	6BJ6	3.8Meg	1KΩ	18Ω	12Ω	†1KΩ	†220KΩ	0Ω
V19	6BJ6	22KΩ	.9Ω	24Ω	18Ω	†1KΩ	†1KΩ	0Ω
V20	6BJ6	18Ω	220Ω	30Ω	36Ω	†4.9KΩ	†1KΩ	0Ω
V21	6BJ6	3.9Meg	120Ω	30Ω	24Ω	†1KΩ	†1KΩ	0Ω
V22	12AT6	10Meg	0Ω	0Ω	12Ω	0Ω	547KΩ	†470KΩ
V23	50C5	150Ω	470KΩ	38Ω	85Ω	470KΩ	†1KΩ	†190Ω
V24	35W4	121Ω	†7Ω	85Ω	121Ω	139Ω	110Ω	50KΩ

† MEASURED FROM PIN 7 OF V24

PHOTOFACT STANDARD NOTATION SCHEMATIC

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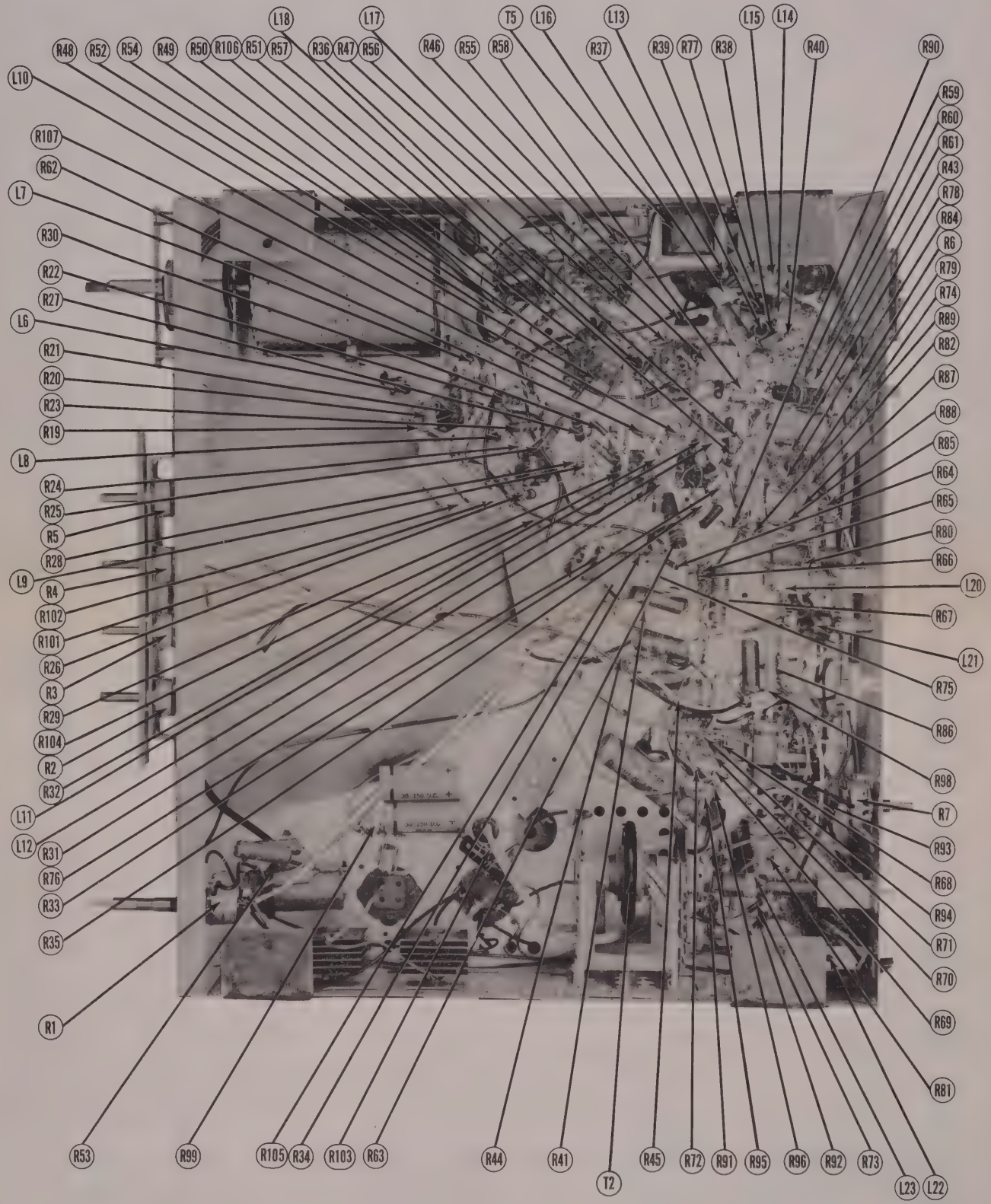
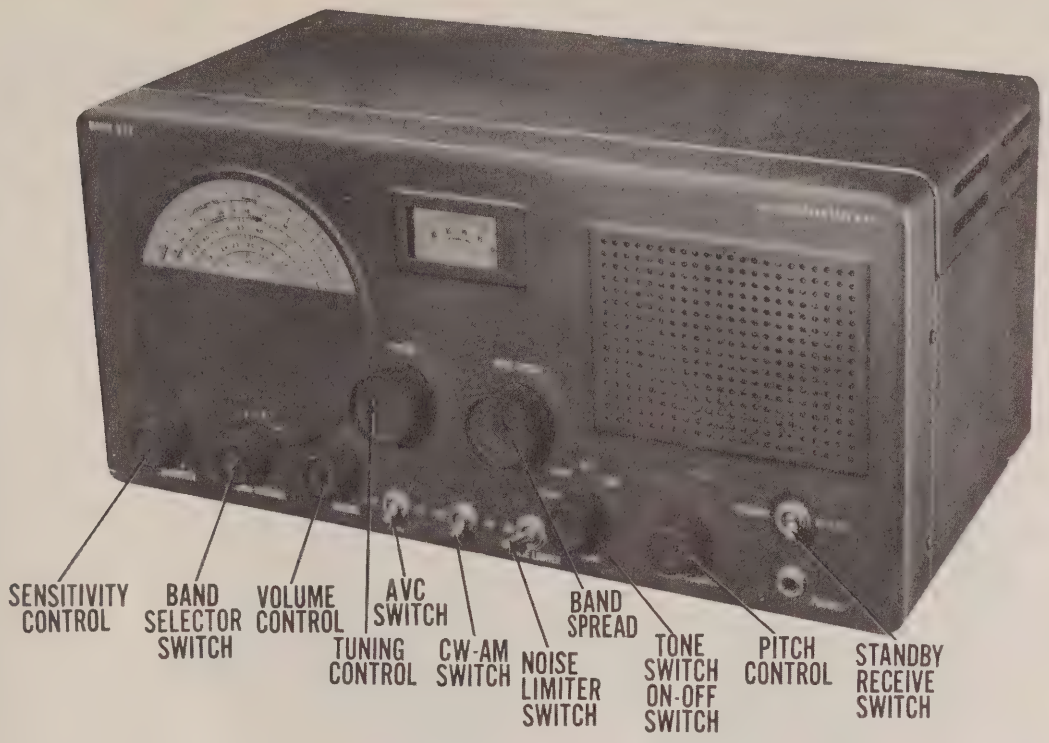
EMERSON MODELS 665-B
(Ch. 120131-B AND RADIO Ch. 120130B)

RADIO SCHEMATIC



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

HALLICRAFTERS
MODEL S-77



TRADE NAME	Hallicrafters, Model S-77
MANUFACTURER	The Hallicrafters Co., 5th and Kostner Avenues, Chicago 24, Illinois
TYPE SET	AC-DC Operated Communications Type Multi-Band Superheterodyne Receiver
TUBES (EIGHT)	Types 6SG7 RF Amp., 6SA7 Converter, 6SK7 1st IF Amp., 6SK7 2nd IF Amp., 6H6 Det.-AVC-ANL, 6SC7 AF Amp.-BFO, 25L6GT Power Output, 25Z6GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC RATING .4Amp. @ 117 Volts AC
TUNING RANGE--	Band #1 540-1680KC, Band #2 1.68-5.4MC Band #3 5.3-15.5MC, Band #4 15.3-44MC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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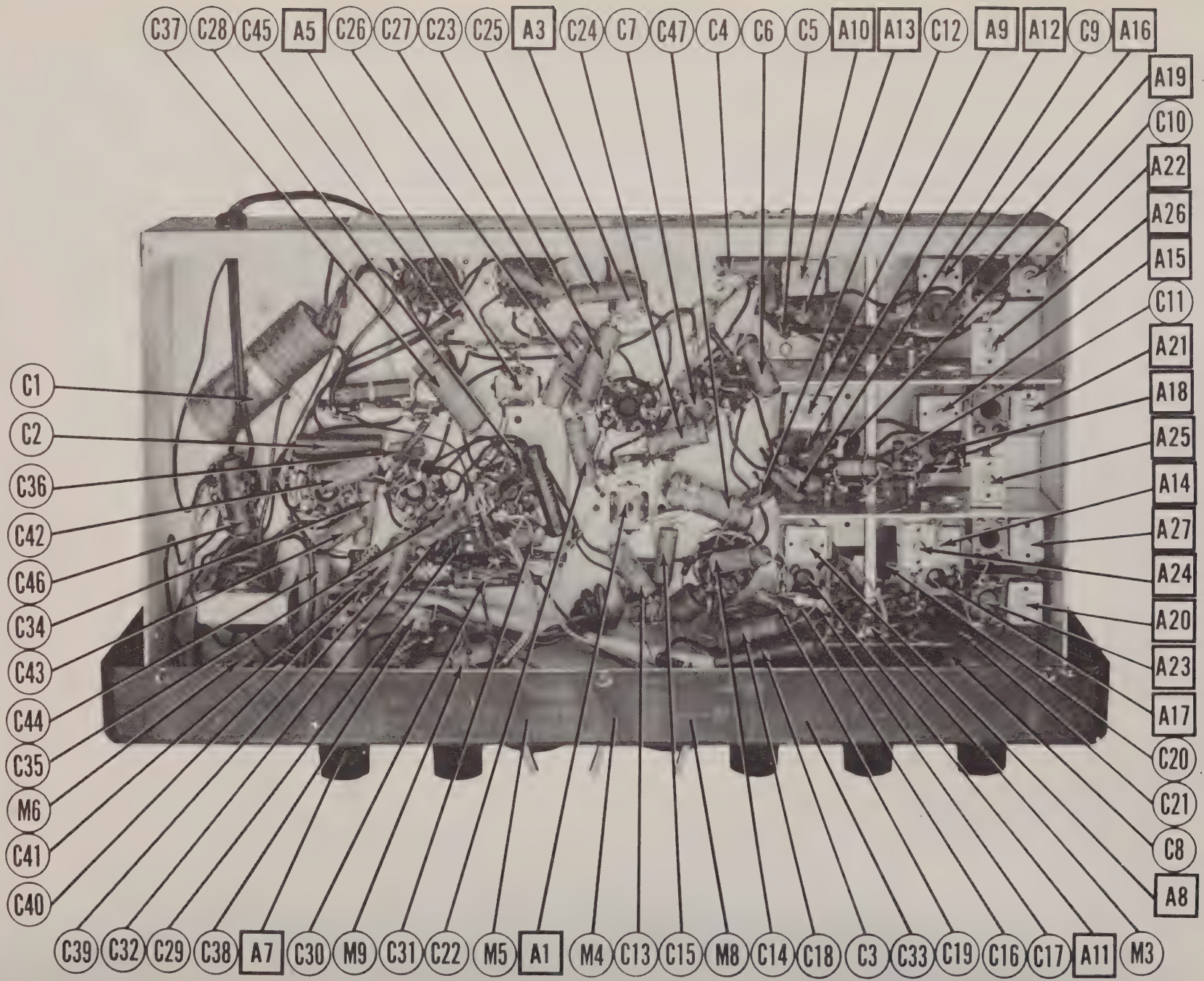
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C42
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C39
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C29
C38
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C30
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C31
C22
M5
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A11
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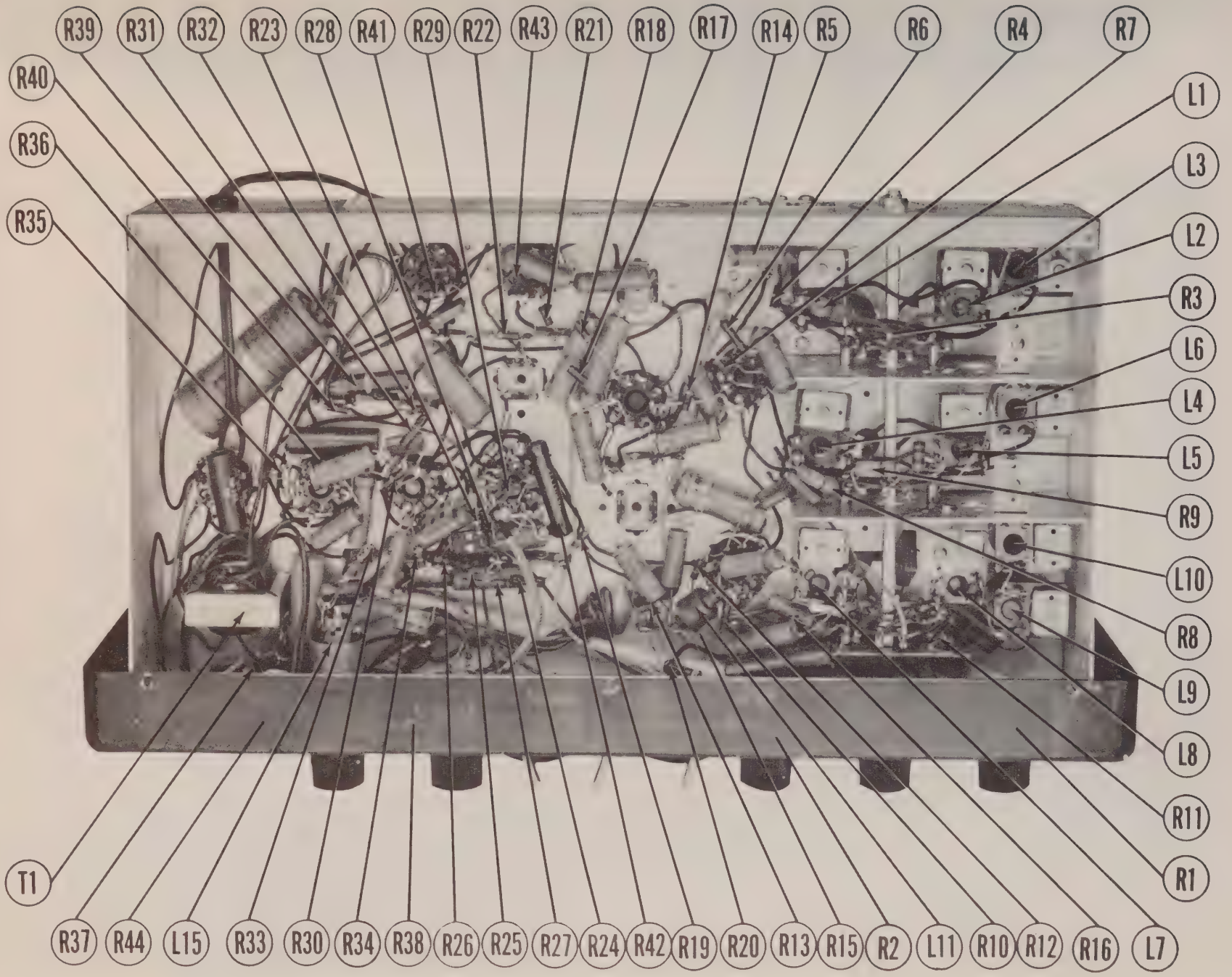
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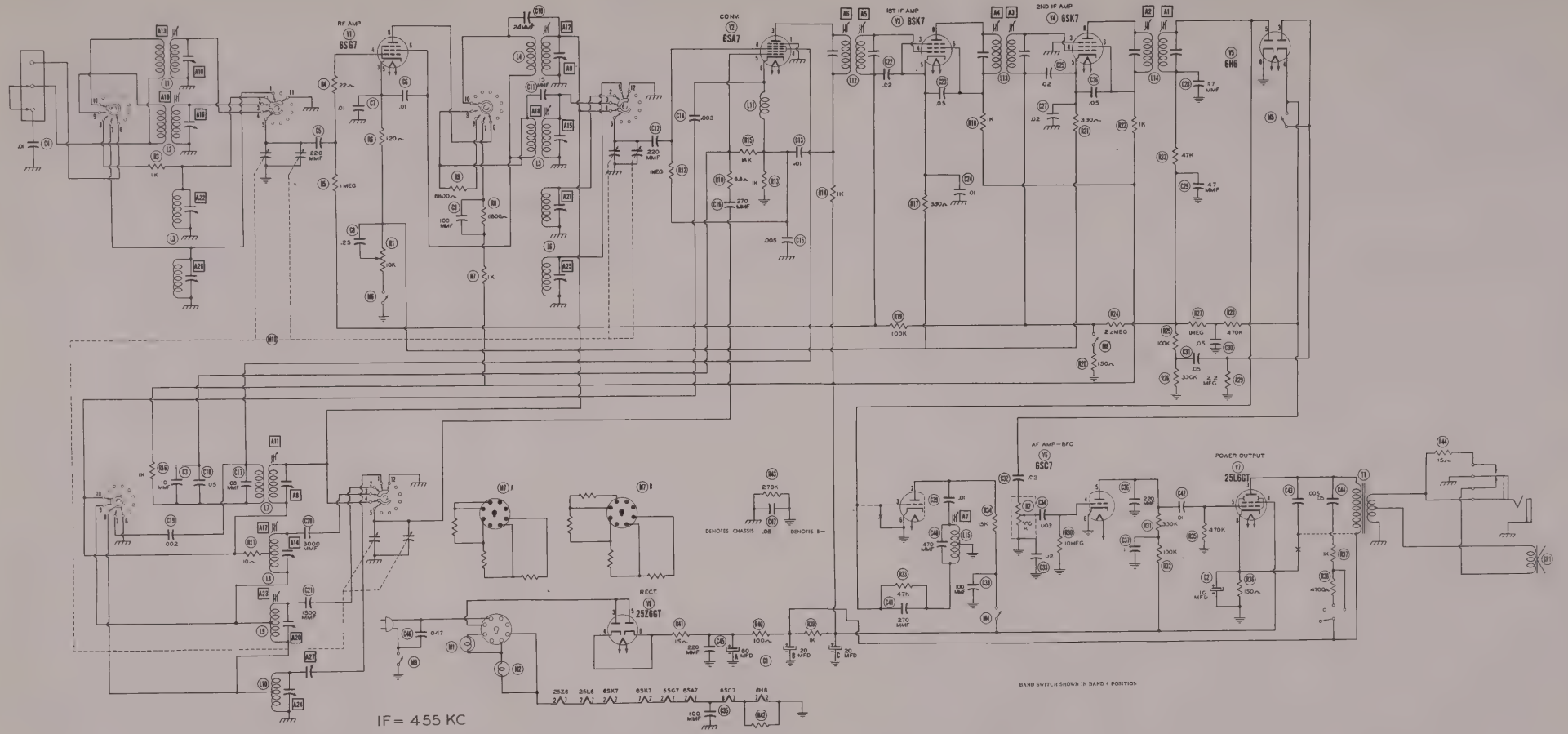

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	6.6V	24VAC	18VDC	-.1VDC	18VDC	100VDC	17.5VAC	100VDC
V 2	6SA7	6.6V	17.5VAC	100VDC	95VDC	85.8VDC	10.6VDC	11.8VAC	1.8VDC
V 3	6SK7	6.6V	24VAC	18VDC	-.1VDC	18VDC	100VDC	30VAC	100VDC
V 4	6SK7	.9VDC	24VAC	0V	.1VDC	18VDC	100VDC	30VAC	100VDC
V 5	6H6	6.6V	0V	0V	0V	-.6VDC	-.6VDC	6.6VAC	0V
V 6	6SC7	-.9VDC	90VDC	0V	-.6VDC	59VDC	0V	6.8VAC	11.5VAC
V 7	25L6GT	0V	60VAC	110VDC	105VDC	0V	0V	36VAC	6.8VDC
V 8	25Z6GT	0V	117VAC	125VDC	117VAC	125VDC	60VAC	125VDC	
V 9	Ballast	0V	85VAC	117VAC	117VAC	0V	0V	85VAC	30VAC

* TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	6.6Ω	310Ω	10KΩ	3.7Meg	10KΩ	12.1KΩ	14Ω	10KΩ
V 2	6SA7	6.6Ω	14Ω	12.1KΩ	12.1KΩ	10KΩ	1.1KΩ	8Ω	1Meg
V 3	6SK7	6.6Ω	2Ω	10KΩ	3.7Meg	10KΩ	13.1KΩ	26Ω	13.1KΩ
V 4	6SK7	270KΩ	32Ω	0Ω	2.6Meg	10KΩ	13.1KΩ	26Ω	13.1KΩ
V 5	6H6	6.6Ω	0Ω	1Meg	1Meg	475KΩ	475KΩ	5Ω	0Ω
V 6	6SC7	50KΩ	415KΩ	1MEG	10Meg	1430KΩ	0Ω	5Ω	8Ω
V 7	25L6GT	Inf	37	12950	11.1KΩ	470KΩ	0Ω	32Ω	150Ω
V 8	25Z6GT	Inf	49Ω	117Ω	20KΩ	117Ω	30KΩ	37Ω	30KΩ
V 9	Ballast	0Ω	55Ω	117Ω	117Ω	Inf.	0Ω	49Ω	52Ω

† MEASURED FROM PIN 8 OF V8

ALL MEASUREMENTS TAKEN IN BAND 1 (AM) POSITION
a MEASURED FROM CHASSIS
b MEASURED IN CW SWITCH POSITION.
SENSITIVITY CONTROL-FULLY COUNTERCLOCKWISE.
AVC SWITCH IN "ON" POSITION
CW-AM SWITCH IN AM POSITION.
NOISE LIMITER IN "OFF" POSITION.
TONE IN "MED." POSITION
STANDBY AND RECEIVE SWITCH IN "RECEIVE" POSITION
PITCH CONTROL FULLY COUNTERCLOCKWISE POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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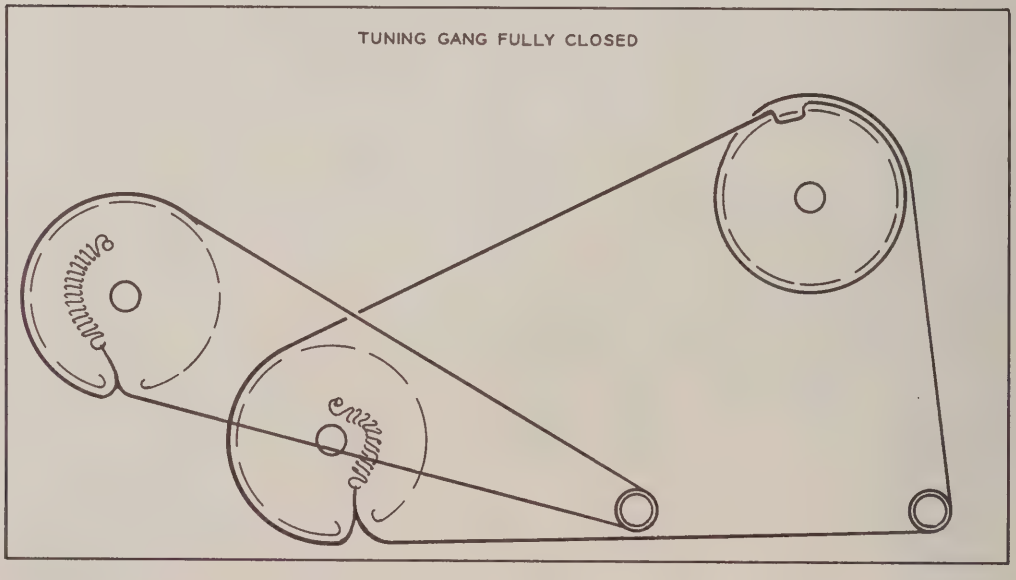
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set the main dial scale, turn main tuning gang fully closed and set the zero on the logging scale under the window index.
To set bandspread scale, turn band spread tuning gang fully open and set the zero on the scale under the window index.
The RMA dummy antenna consists of a 200MMF capacitor in series with a 20 microhenry coil which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.

Set the controls as follows :

Sensitivity to maximum
Volume to maximum
AVC switch to OFF
Bandspread to zero
CW/AM switch to AM
Noise limiter to OFF
Standby receive switch to RECEIVE
Tone switch to HIGH

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to stator on center section of tuning gang. Low side to chassis.	455KC (400∿Mod.)	1	1000KC	Across voice coil.	A1, A2, A3, A4, A5, A6	Adjust for maximum output. Attenuate signal generator to maintain 50MW output.
2.	"	"	455KC (Unmod.)	"	"	"	A7	Turn CW/AM switch to CW. Remove pitch control knob. Adjust A7 for zero beat in the speaker. Replace the knob with the index mark straight up.
3.	RMA	High side to antenna terminal "A1," (Connect link between A2 and G). Low side to chassis.	36MC (400∿Mod.)	4	36MC	"	A8, A9, A10	Adjust for maximum output.
4.	"	"	18MC (400∿Mod.)	"	18MC	"	A11, A12, A13	Adjust for maximum output. Repeat steps 3 and 4 until no further improvement can be made.
5.	"	"	14MC (400∿ Mod.)	3	14MC	"	A14, A15, A16	Adjust for maximum output.
6.	"	"	10MC (400∿ Mod.)	"	10MC	"	A17, A18, A19	Adjust for maximum output. Repeat steps 5 and 6 until no further improvement can be made.
7.	"	"	5MC	2	5MC	"	A20, A21, A22	Adjust for maximum output.
8.	"	"	1.8MC	"	1.8MC	"	A23	Adjust for maximum output. Repeat steps 7 and 8 until no further improvement can be made.
9.	"	"	1500KC	1	1500KC	"	A24, A25 A26	Adjust for maximum output.
10.	"	"	600KC	"	600KC	"	A27	Adjust for maximum output. Repeat steps 9 and 10 until no further improvement can be made.



DIAL CORD DRIVE

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		HALLICRAFTERS PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	90X6SG7	6SG7	8BK	
V2	Converter	90X6SA7	6SA7	8R	
V3	1st IF Amplifier	90X6SK7	6SK7	8N	
V4	2nd IF Amplifier	90X6SK7	6SK7	8N	
V5	Detector-AVC-ANL	90X6H6	6H6	7Q	
V6	AF Amplifier-BFO	90X6SC7	6SC7	8S	
V7	Power Output	90X25L6GT	25L6GT	7AC	
V8	Rectifier	90X25Z6GT	25Z6GT	7Q	

CAPACITORS

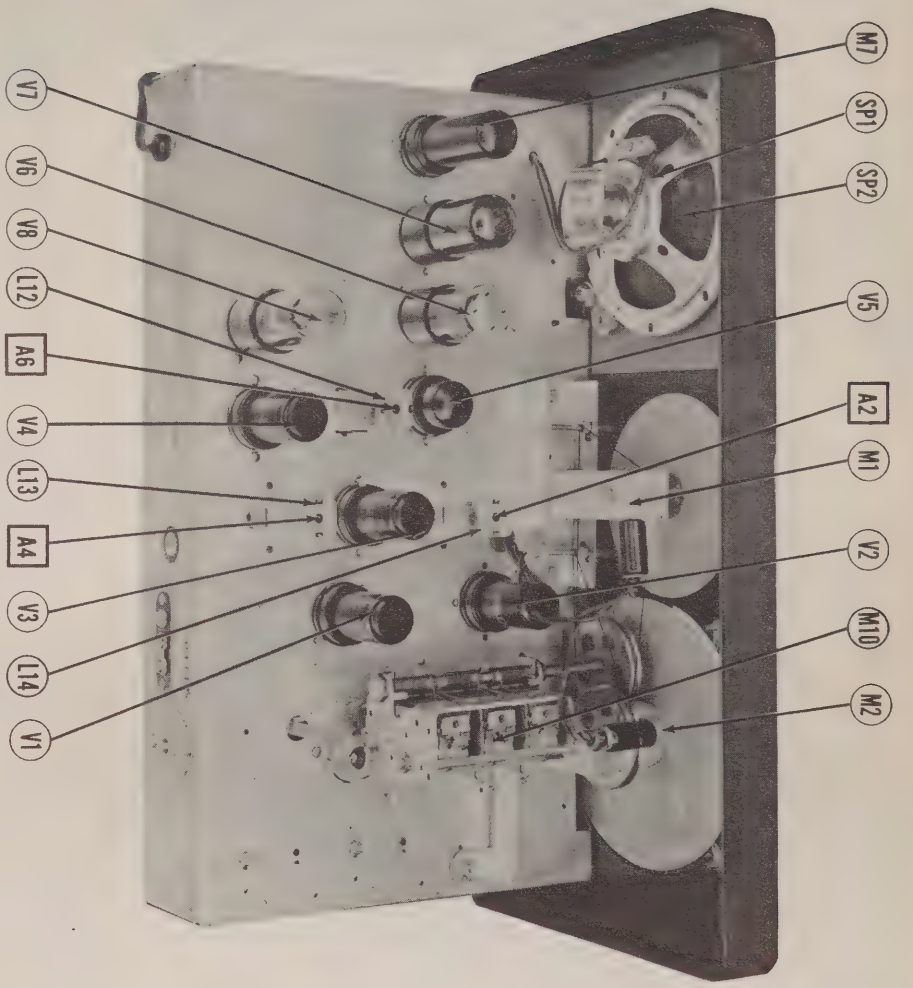
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	Hallicrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	175	45B128-C	PRS200/30-30		EDL7V225		R1137	Filter
B	20	175		PRS250/20-20		BR2025			Filter
C	20	175							Filter
C2	10	25	45A121	PRS25/10		BR102A		TVA-1204	Output Cathode
C3	10	150	45A097	PRS150/12		BR1015		TVA-1406	Osc. Anode Dec.
C4	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Ant. Isolation
C5	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Coupling
C6	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Amp. Screen
C7	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Bypass
C8	.25	200	46AT254J	P488-25		GT2P25		2TM-P25	Sensitivity Cont. Bypass
C9	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	RF Coupling
C10	24		47X25UK240M	SI25NPO	TCZ-24		NPOK-240	5TCC-Q25	RF Coupling
C11	15		47X21UK150M		TCN-15		N750K-150	5TCU-Q15	RF Coupling
C12	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Coupling
C13	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Conv. Plate Dec.
C14	.003	600	46AY302J	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Osc. Feedback
C15	.005	600	46AZ502J	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Conv. Cathode Bypass
C16	270	500	47X20B271K	1469-0003		5R5T3		MS-33	Osc. Grid Cap.
C17	68		47X25UK680K		TCZ-68		NPO-333-680	5TCC-Q68	Fixed Trimmer
C18	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	Osc. Anode Dec.
C19	.002	600	46AZ202J	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Osc. Anode Bypass
C20	3000	500	47X35B302K	1467-003	D6-302	1W5D3	GP2-333-302	MS-23	Fixed Padder
C21	1500	500	47X35C152J	1467-0015	D6-152	1W5D15	GP2L-152	1FM-215	Fixed Padder
C22	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C23	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	1st IF Amp. Dec.
C24	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	1st IF Amp. Cathode
C25	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C26	.05	600	46AY503J	P688-05	DF-503	PTE6S2		6TM-S5	2nd IF Amp. Dec.
C27	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	2nd IF Amp. Cathode
C28	47	500	47X20B470K	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Diode RF Filter
C29	47	500	47X20B470K	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Diode RF Filter
C30	.05	200	46AU503N	P288-05	DF-503	PTE4S5		2TM-S5	RF Bypass
C31	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C32	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	Audio Coupling
C33	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	Vol. Cont. Isolation
C34	.003	600	46AY302J	P488-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Audio Coupling
C35	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GP1K-10	1FM-31	AF Amp. Fil.
C36	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		AF Amp. Plate
C37	.1	600	46AY104J	P688-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C38	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	RF Bypass
C39	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	BFO Feedback
C40	470	500	47X20B471J	1469-0005		5R5T5		MS-35q	Fixed Trimmer
C41	270	500	47X20B271K	1469-0003		5R5T3		MS-33	BFO Grid Cap.
C42	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C43	.005	600	46AZ502J	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Output Plate
C44	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Tone Comp.
C45	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Bypass
C46	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Line Filter †
C47	.05	600	46A150	P688-05 *	DF-503 *	PTE6S5 *		6TM-S5 *	Line Isolation ‡

† Some models use .02MFD in this application (Mfgrs. Part No. 46BR203L6).
‡ Special resonate Cap.
* When replacing, duplicate original coil wound on C47.

SET 146 FOLDER 7

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	10KΩ	½	25B590	Q13-116	AM-81-Z	B-15	Sensitivity Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R1A Per Instructions
R2A	500KΩ	½	25B586	Q13-133	AG-60-Z	B-60	Volume Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R2A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Hallicrafters PART No.	IRC PART No.	
R3	1000Ω	½	23X20X102K	BTS-1000	Antenna Loading
R4	22Ω	½	23X20X220K		Parasitic Suppressor
R5	1Meg	½	23X20X105M	BTS-1Meg	RF Amp. Grid
R6	120Ω	½	23X20X121K	BTS-120	RF Amp. Cathode
R7	1000Ω	½	23X20X102K	BTS-1000	RF Amp. Decoupling
R8	6800Ω	1	23X30X682K	BTA-6800	RF Amp. Plate
R9	6800Ω	1	23X30X682K	BTA-6800	RF Amp. Plate
R10	6.8Ω	½	23X20X068K		Parasitic Suppressor
R11	10Ω	½	23X20X100K		Parasitic Suppressor
R12	1Meg	½	23X20X105M	BTS-1Meg	Conv. Grid
R13	1000Ω	½	23X20X102K	BTS-1000	Conv. Cathode
R14	1000Ω	½	23X20X102K	BTS-1000	Conv. Decoupling
R15	18KΩ	½	23X20X183K	BTS-18K	Osc. Grid
R16	1000Ω	½	23X20X102K	BTS-1000	Osc. Anode
R17	330Ω	½	23X20X331K	BTS-330	1st IF Amp. Cathode
R18	1000Ω	½	23X20X102K	BTS-1000	1st IF Amp. Decoupling
R19	100KΩ	½	23X20X104M	BTS-100K	AVC Network
R20	150Ω	½	23X20X151K	BTS-150	AVC Load
R21	330Ω	½	23X20X331K	BTS-330	2nd IF Amp. Cathode
R22	1000Ω	½	23X20X102K	BTS-1000	2nd IF Amp. Decoupling
R23	47KΩ	½	23X20X473K	BTS-47K	Diode Filter
R24	2.2Meg	½	23X20X225M	BTS-2.2Meg	AVC Network
R25	100KΩ	½	23X20X104M	BTS-100K	Diode Load
R26	330KΩ	½	23X20X334M	BTS-330K	Diode Load
R27	1Meg	½	23X20X105M	BTS-1Meg	AVC Network
R28	470KΩ	½	23X20X474M	BTS-470K	AVC Network
R29	2.2Meg	½	23X20X225M	BTS-2.2Meg	ANL Load
R30	10Meg	½	23X20X106M	BTS-10Meg	AF Amp. Grid
R31	330KΩ	½	23X20X334M	BTS-330K	AF Amp. Plate
R32	100KΩ	½	23X20X104M	BTS-100K	AF Amp. Decoupling
R33	47KΩ	½	23X20X473K	BTS-47K	BFO Grid
R34	15KΩ	½	23X20X153K	BTS-15K	BFO Plate
R35	470KΩ	½	23X20X474M	BTS-470K	Output Grid
R36	150Ω	½	23X20X151K	BTS-150	Output Cathode
R37	1000Ω	½	23X20X102K	BTS-1000	Tone Compensation-See Note
R38	4700Ω	½	23X20X472K	BTS-4700	Tone Compensation-See Note
R39	1000Ω	2	23X40X102K	BTB-1000	Filter
R40	100Ω	½	23X20X101K	BTS-100	Filter
R41	15Ω	½	23X20X150K		Surge Limiter
R42	110Ω	10	24BG111E		Filament Shunt-Wire Wound
R43	270KΩ	½	23X20X274K	BTS-270K	Isolation
R44	15Ω	1	23X30X150M	BW-1-15	Output XFMR Shunt

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	15Ω Tap 3.2Ω	180Ω	.9Ω	55B110		A-2902 ①		① Drill new mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA				INSTALLATION NOTES
	FIELD RES.	V.C. IMP.	Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.		
SP1	PM	3.2Ω	85B050	ST105 Mod. P5-X	5A1		
	CONE DIA.	V.C. DIA.					
SP2	5"	9/16"					

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	Hallicrafters PART No.	MEISSNER PART No.	
L1	Ant. Coil	.2Ω	0Ω	51B783		Band 4 Incluees Trimmer
L2	Ant. Coil	.2Ω	0Ω	51B782		Band 3 Includes Trimmer
L3	Ant. Coil	A0Ω	B0Ω	51B1241		Band 2 and 1
L4	RF Coil	1.4Ω	0Ω	51B786		Band 4 Includes Trimmer
L5	RF Coil	8.5Ω	0Ω	51B786		Band 3 Includes Trimmer
L6	RF Coil	A0Ω	B0Ω	51B1240		Band 2 and 1
L7	Osc. Coil	.4Ω	0Ω	51B791		Band 4 Includes Trimmer
L8	Osc. Coil	.1Ω	Tap0Ω	51B913		Band 3 Includes Trimmer
L9	Osc. Coil	1.2Ω	Tap0Ω	51B789		Band 2 Includes Trimmer
L10	Osc. Coil	3Ω	Tap0Ω	51B912		Band 1 Includes Padder
L11	Cathode Choke	120Ω		53A138		
L12	1st IF	9Ω	9Ω	50C243		
L13	2nd IF	9Ω	9Ω	50C243		
L14	3rd IF	16Ω	16Ω	50C242		
L15	BFO Osc.	17Ω	Tap6Ω	54B044		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Hallicrafters PART No.		
M1	Bayonet	6-8	.15	Brown	39A004		Type number 47.
M2	Bayonet	6-8	.15	Brown	39A004		Type number 47.

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
M3A	Switch,Band	60B389	Ant. Wafer
B		62B039	RF Wafer
C		62B044	Osc. Wafer
M4	Switch	60A138	AM-CW
M5	Switch	60A138	ANL
M6	Switch	60A138	Stand-by/Receive
M7A	Ballast	24B875	117Volt
B	Ballast	24B874	220Volt
M8	Switch	60A138	AVC
M9	Switch	60A225	Off-On/Tone
M10	Tuning Gang	48C240-B	
A24	Trimmer	44A191	Band #1 Osc. Adj.
A25	Trimmer	44A191	Band #1 RF Adj.
A26	Trimmer	44A191	Band #1 Ant. Adj.
	Dial	83C240	Main Tuning
	Dial	83B372	Band Spread
	Knob	15A266	Band
	Knob	15A058	Pitch Control
	Knob	15A047	Tuning and Band Spread
	Knob	15A049	Sensitivity, Volume and Tone

PHOTOFACT* Folder

*TRADE MARK

KAYE-HALBERT MODELS 014, 024, 044, 045, 046, 074, 076, 077, 424, 714, 724, 744, 745, 777, 914

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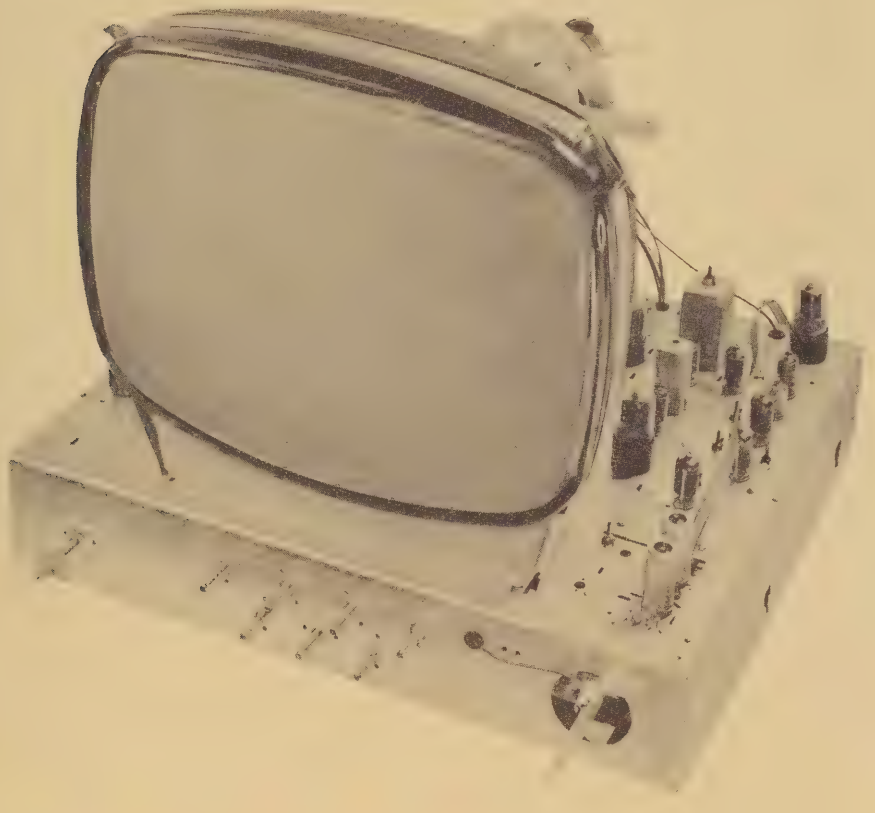

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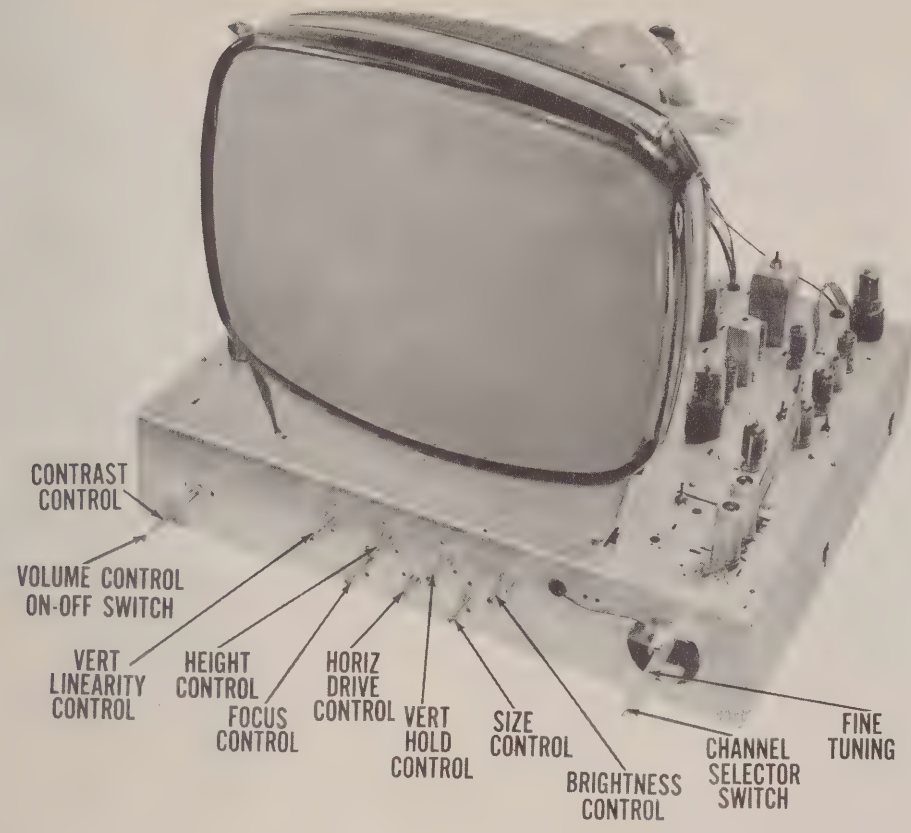

KAYE-HALBERT MODELS 014, 024, 044, 045, 046, 074, 076, 077, 424, 714, 724, 744, 745, 777, 914

TRADE NAME	Kaye-Halbert Chassis 253 (Used in Models 014, 024, 044, 045, 046, 074, 076, 077, 424, 714, 724, 744, 745, 746, 777, 914)
MANUFACTURER	Kaye-Halbert Corp., 3555 Hayden Avenue Culver City, California
TYPE SET	Television Receiver
TUBES	Twenty Five
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	2.0 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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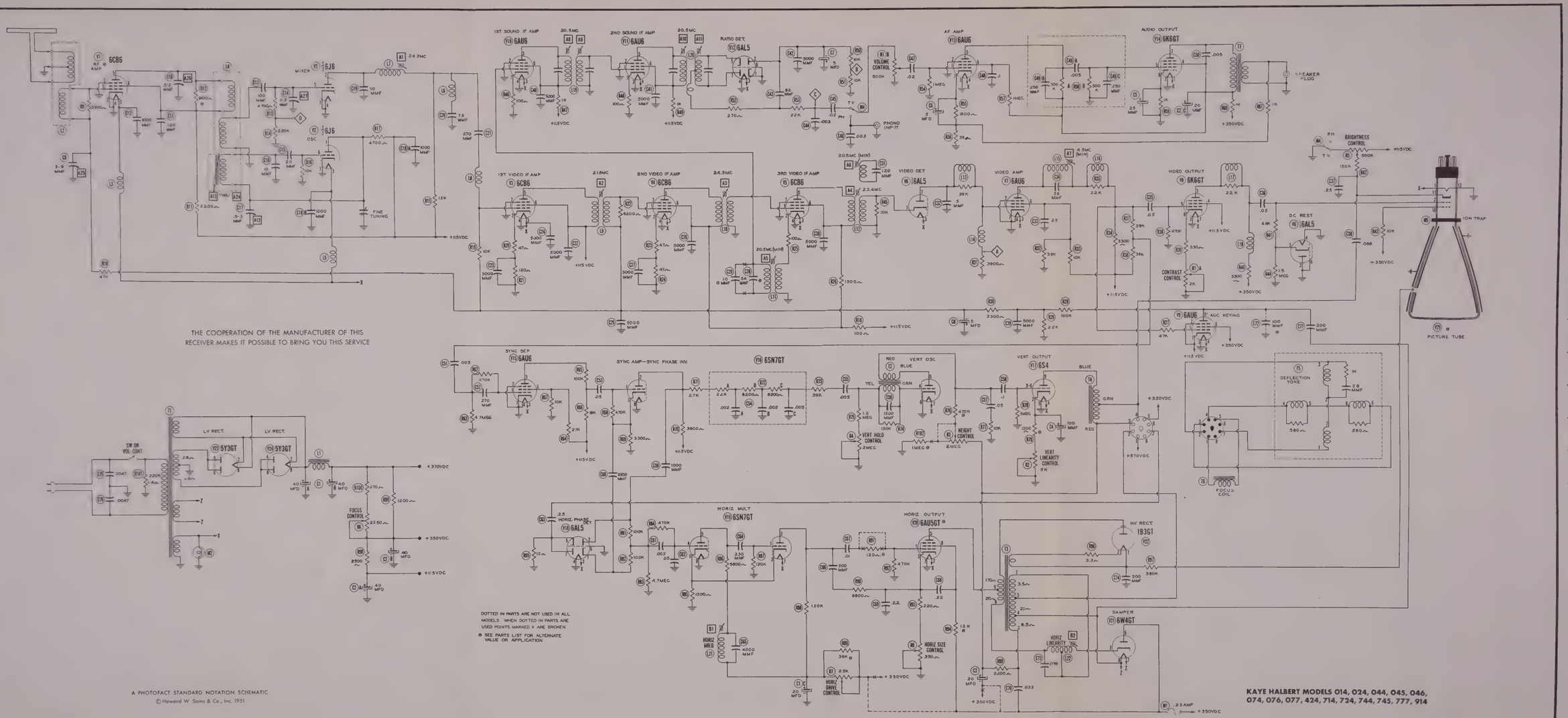
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DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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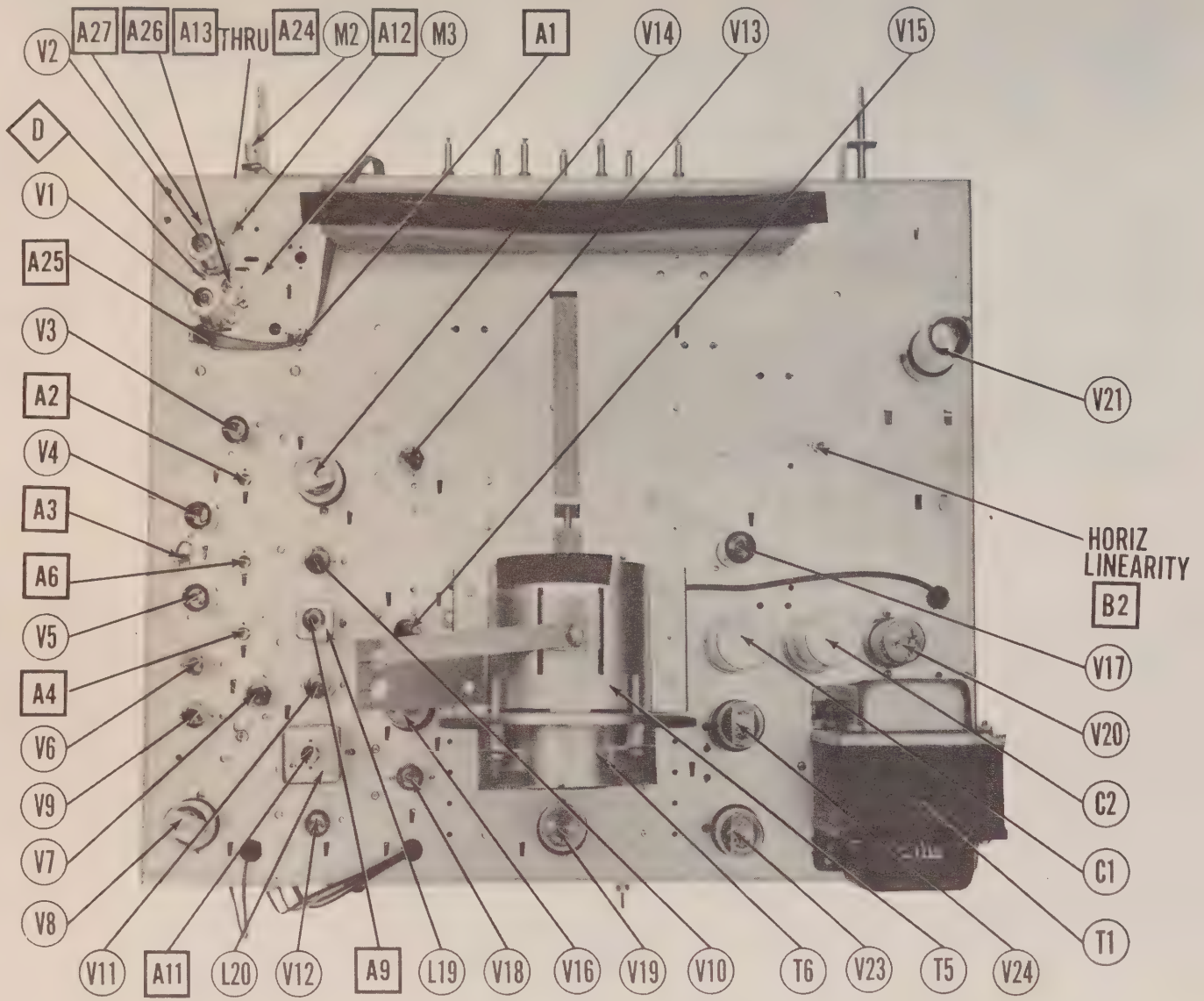
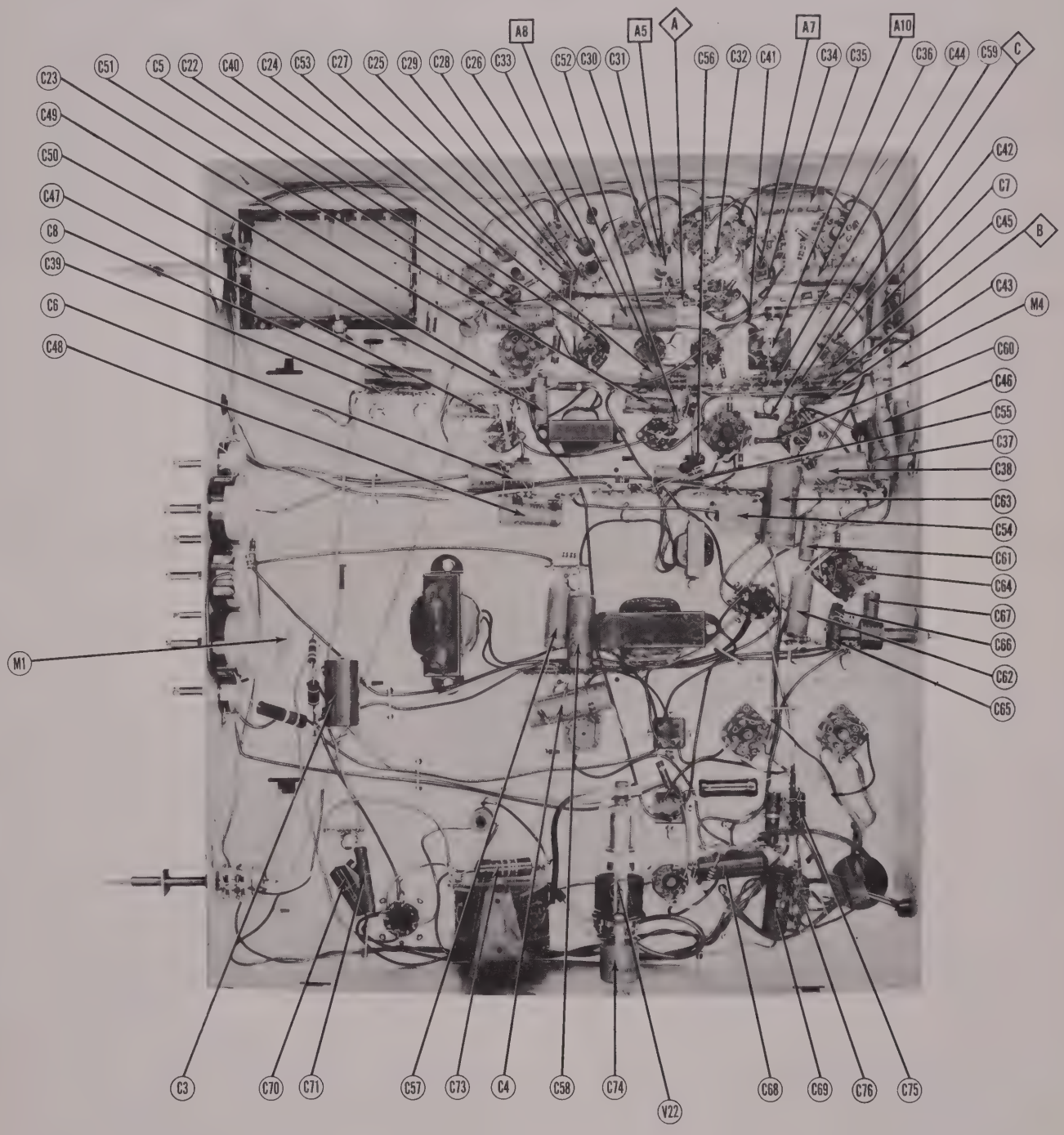
KAYE-HALBERT MODELS 014, 024, 044, 046, 074, 076, 077, 424, 714, 724, 744, 745, 777, 914



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

KAYE-HALBERT MODELS 014, 024, 044, 046, 074, 076, 077, 424, 714, 724, 744, 745, 777, 914

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn the horizontal size control to fully counter-clockwise and remove the horizontal oscillator tube, (V19), from its socket to eliminate the high voltage shock hazard.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24.2MC (unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	21.8MC	"	"	A2	"
3.	"	"	24.3MC	"	"	A3	"
4.	"	"	23.4MC	"	"	A4	"
5.	"	"	20.5MC	"	"	A5, A6	Detune A6 by placing your finger on the windings while adjusting A5 for MINIMUM deflection. Then adjust A6 for MINIMUM deflection. If necessary detune A5 with finger while adjusting A6.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	20.5MC 21.4MC 25MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 through A4 for proper response. If A4 is changed recheck trap A5. In extreme fringe areas, greater gain may be obtained by aligning the IF's so the 25MC marker occurs at the top of the curve. Adjacent channel traps are available if needed. It is possible to tune A5 to 26.5MC to use it as an adjacent sound trap.

4.5 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD.	High side to Point A . Low side to chassis.	Not used	4.5MC (400∿ mod.)	Any	Vert. Amp. to pin 2 of picture tube. Low side to chassis.	A7	Adjust for MINIMUM 400∿ indication on scope

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD.	High side to pin 1, (Grid) of 6AU6, (V10). Low side to chassis.	20.5MC (unmod.)	Any	DC probe to Point (B). Common to chassis.	A8, A9, A10	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to Point (C). Common to Point (B).	All	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.01MFD.	High side to pin 1, (Grid), of 6AV6, (V10). Low side to chassis.	20.5MC (10MC SWP)	20.5MC	Any	Vert. Amp. tp Point (B). Low side to chassis.	A8, A9, A10	Disconnect stabilizer capacitor C7. Adjust for maximum amplitude and symmetry as per fig. 2.
9.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	All	Reconnect capacitor C7. Adjust All so 10.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A12. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A12 will not bring all channels well within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC	13	DC probe to Point (C). Common to Point (B).	A13	Adjust for zero reading. A positive and negative reading will obtained on either side of the correct setting.
			209.75MC	12		A14	
			203.75MC	11		A15	
			197.75MC	10		A16	
			191.75MC	9		A17	
			185.75MC	8		A18	
			179.75MC	7		A19	
			87.75MC	6		A20	
			81.75MC	5		A21	
			71.75MC	4		A22	
			65.75MC	3		A23	
			59.75MC	2		A24	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to Point ◇D. Low side to chassis.	A25, A26 A27	Adjust for response curve similar to fig. 4 with markers above 90%.
12.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check for response curve similar to fig. 4. If markers fall below 70% on any channel, make slight adjustments fo A25, A26, and A27 with channel selector set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

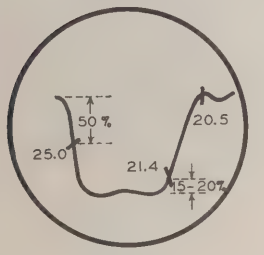


FIG. 1

FIG. 2

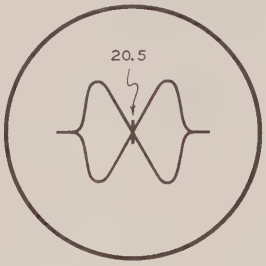


FIG. 3

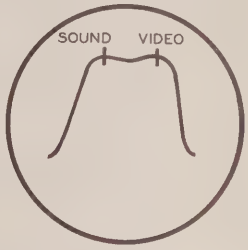


FIG. 4

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-2.5VDC	0V	6.3VAC	0V	90VDC	90VDC	0V		
V 2	6J6	85VDC	115VDC	6.3VAC	0V	-1.4VDC	§-3VDC	0V		
V 3	6CB6	-.1VDC	1.1VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 4	6CB6	-.1VDC	1.3VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 5	6CB6	0V	1.6VDC	6.3VAC	0V	95VDC	95VDC	0V		
V 6	6AL5	0V	0V	6.3VAC	0V	1.3VDC	0V	-.6VDC		
V 7	6AU6	-.7VDC	0V	6.3VAC	0V	95VDC	75VDC	0V		
V 8	6K6GT	0V	0V	310VDC	110VDC	0V	9.8VDC	6.3VAC	11.9VDC	
V 9	6AU6	100VDC	110VDC	0V	6.3VAC	-.2VDC	340VDC	110VDC		
V 10	6AU6	0V	0V	6.3VAC	0V	105VDC	105VDC	.8VDC		
V 11	6AU6	0V	0V	0V	6.3VAC	105VDC	105VDC	.8VDC		
V 12	6AL5	0V	-.7VDC	6.3VAC	0V	-.5VDC	0V	-.5VDC		
V 13	6AU6	0V	0V	0V	6.3VAC	75VDC	54VDC	1.5VDC		
V 14	6K6GT	0V	0V	300VDC	320VDC	0V	0V	6.3VAC	26VDC	
V 15	6AU6	-.8VDC	0V	6.3VAC	0V	100VDC	30VDC	0V		
V 16	6SN7GT	§20VDC	85VDC	21VDC	§-7.2VDC §-10.1VDC	50VDC 250VDC	0V	6.3VAC	0V	
V 17	6S4	0V	25VDC 36VDC	0V	6.3VAC	0V	0V	0V	0V	340VDC
V 18	6AL5	2.6VDC	-2.5VDC	6.3VAC	0V	0V	0V	0V		
V 19	6SN7GT	§-8.2VDC §-10.4VDC	110VDC 155VDC	9.8VDC	§.2VDC	210VDC 295VDC	9.8VDC	6.3VAC	0V	
V 20	6AU5GT	0V	6.3VAC	20VDC 43VDC	0V	*	0V	0V	220VDC 255VDC	
V 21	6W4GT	510VDC	0V	570VDC	0V	340VDC	0V	570VDC	570VDC	
V 22	1B3GT	* DO NOT MEASURE								Top Cap *
V 23	5Y3GT	0V	380VDC	0V	340VAC	0V	340VAC	0V	380VDC	
V 24	5Y3GT	0V	380VDC	0V	340VAC	0V	340VAC	0V	380VDC	
V 25	17' Pix Tube	6.3VAC	1.2VDC	PIN 10 340VDC	PIN 11 0V 110VDC	PIN 12 0V	H. V. CONNECTOR 1.25K. V.			

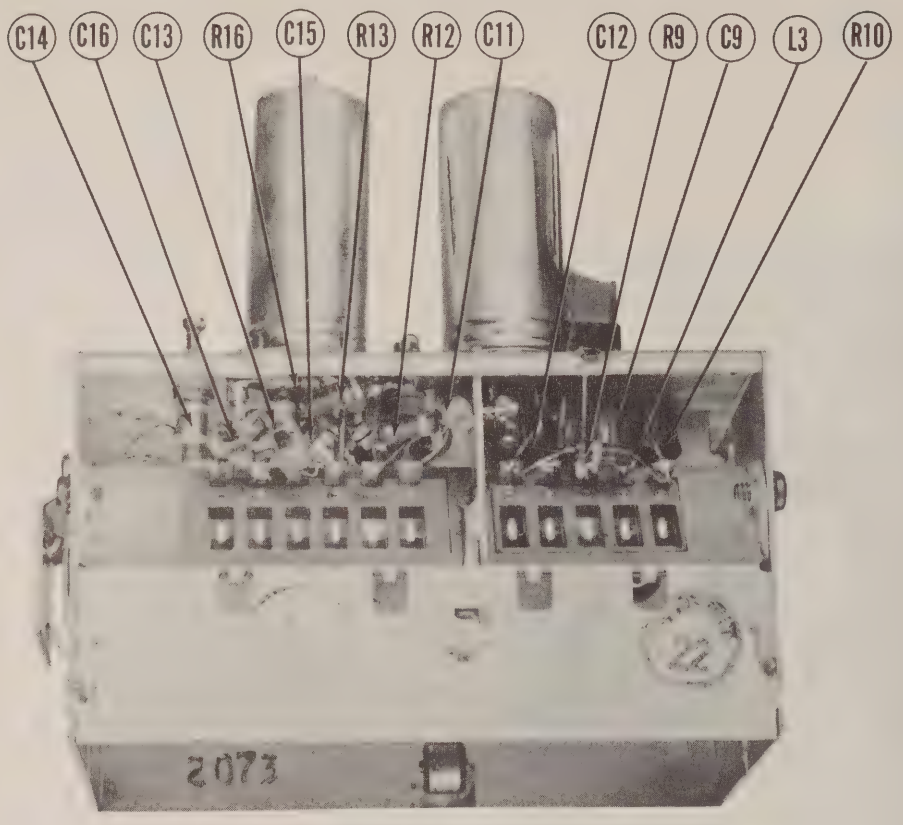
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER-CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT MEASURE
** USE EXTREME CAUTION WHEN MEASURING THIS VOLTAGE

RESISTANCE READINGS

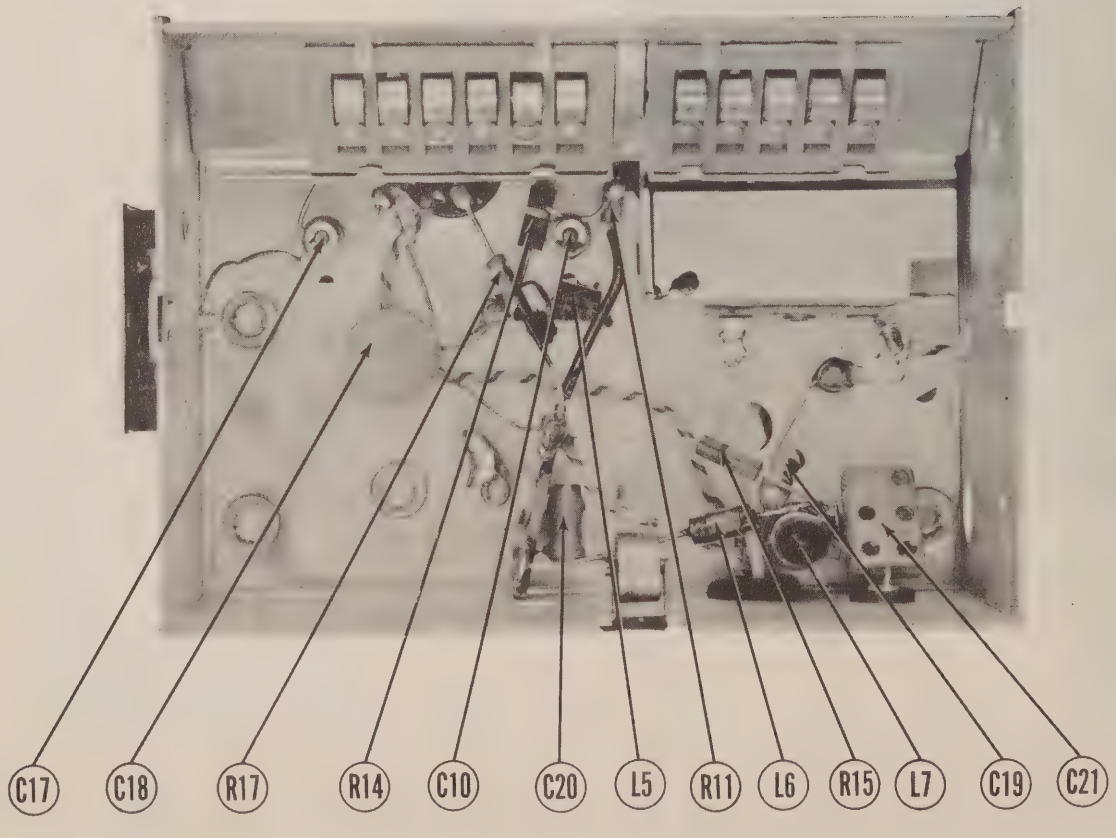
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	72KΩ	0Ω	.1Ω	0Ω	†4.8KΩ	†4.8KΩ	0Ω		
V 2	6J6	†7.3KΩ	†17KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	35KΩ	165Ω	.1Ω	0Ω	†2.6KΩ	†2.6KΩ	0Ω		
V 4	6CB6	25KΩ	95Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	0Ω		
V 5	6CB6	.3Ω	100Ω	.1Ω	0Ω	†4.2KΩ	†4.2KΩ	0Ω		
V 6	6AL5	.3Ω	0Ω	.1Ω	0Ω	1.5Meg	0Ω	3.9KΩ		
V 7	6AU6	3.9KΩ	0Ω	.1Ω	0Ω	†5.9KΩ	†11KΩ	0Ω		
V 8	6K6GT	Inf.	0Ω	†3.4KΩ	†2.6KΩ	470KΩ	2KΩ	.1Ω	2.3KΩ	
V 9	6AU6	†53KΩ	†2.6KΩ	0Ω	.1Ω	122KΩ	†140Ω	†2.6KΩ		
V 10	6AU6	0Ω	0Ω	.1Ω	0Ω	†3.6KΩ	†3.6KΩ	100Ω		
V 11	6AU6	.1Ω	0Ω	0Ω	.1Ω	†3.6KΩ	†3.6KΩ	100Ω		
V 12	6AL5	0Ω	20KΩ	.1Ω	0Ω	Inf.	0Ω	Inf.		
V 13	6AU6	1Meg	0Ω	0Ω	.1Ω	†500KΩ	†1Meg	1.8KΩ		
V 14	6K6GT	0Ω	0Ω	†1.7KΩ	†1.1KΩ	500KΩ	Inf.	.1Ω	1KΩ	
V 15	6AU6	5.1Meg	0Ω	.1Ω	0Ω	†120KΩ	†14KΩ	0Ω		
V 16	6SN7GT	470KΩ	†6.4KΩ	3.3KΩ	3.3Meg 1.3Meg	#1.4Meg #470KΩ	0Ω	.1Ω	0Ω	
V 17	6S4	Inf.	6.5KΩ 1.5KΩ	1Meg	.1Ω	0Ω	1Meg	Inf.	Inf.	#3.7KΩ
V 18	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	15Ω	0Ω	15Ω		
V 19	6SN7GT	120KΩ	†175KΩ †150KΩ	1.5KΩ	5.1Meg	†30KΩ †5.7KΩ	1.5KΩ	.1Ω	0Ω	
V 20	6AU5GT	470KΩ	.1Ω	570Ω 220Ω	Inf.	#27Ω	Inf.	0Ω	†12KΩ	
V 21	6W4GT	#2.2KΩ	Inf.	120KΩ	Inf.	†140Ω	Inf.	#25Ω	#25Ω	
V 22	1B3GT	PINS 1-8 HAVE INF. RESISTANCE								Top Cap #200Ω
V 23	5Y3GT	Inf.	23KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	23KΩ	
V 24	5Y3GT	Inf.	23KΩ	Inf.	27Ω	Inf.	27Ω	Inf.	23KΩ	
V 25	17' Pix Tube	.1Ω	1.5Meg	PIN 10 †10KΩ	PIN 11 †650KΩ †150KΩ	PIN 12 0Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER-CLOCKWISE
† MEASURED FROM PIN 8 OF V24
# MEASURED FROM PIN 3 OF V21

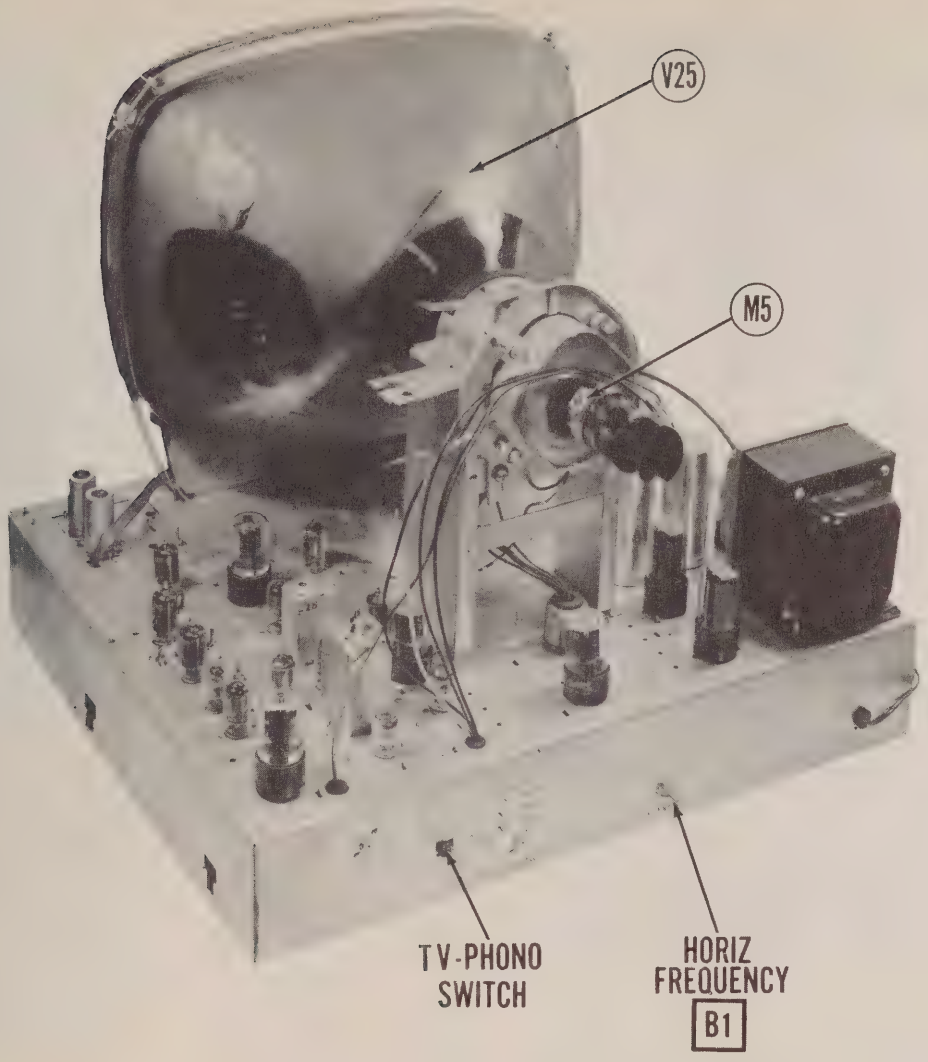
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive control clockwise until bright vertical lines appear in the picture. Then turn the control counter clockwise just far enough to remove the lines. NOTE: If the vertical lines cannot be removed see SIZE CONTROL CIRCUIT MODIFICATIONS below.

Adjust the size control until the picture is slightly wider than necessary to fill the mask horizontally. The size control affects both height and width, therefore whenever the size control is changed, height and vertical linearity will also require adjustment.

Adjust the horizontal linearity slug, (B2), until the picture is symmetrical from left to right. Readjustment of the horizontal drive control may be necessary for optimum horizontal linearity

SIZE CONTROL CIRCUIT MODIFICATIONS

If the bright vertical drive lines cannot be removed by adjusting the drive control, especially in set using a 6AV5 horizontal output, they may be eliminated by making the following circuit changes.

Disconnect R93, (220Ω 2W) from the size control R8.

Connect the bottom of R93 to chassis.

Disconnect the size control R8 from chassis.

Connect a 1200Ω, 1W resistor between the center arm of R8 and one end.

Break the lead connecting the fuse to R94 and the plate, (Pin 5), of the damper tube, (V21).

Connect the center arm of R8 to the junction of R94 and pin 5 of V21.

Connect the end of R8, (to which the 1200Ω resistor is connected), to the fuse.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KAYE-HALBERT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	6CK	
B	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	6CK	
V4	2nd. Video IF Amp.	6CB6	6CB6	6CK	
V5	3rd. Video IF Amp.	6CB6	6CB6	6CK	
V6	Video Detector-DC Restorer	6AL5	6AL5	6BT	
V7	Video Amplifier	6AU6	6AU6	7BK	
V8	Video Output	6K6GT	6K6GT	7S	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier	6AU6	6AU6	7BK	
V14	Audio Output	6K6GT	6K6GT	7S	
V15	Sync. Separator	6AU6	6AU6	7BK	
V16	Sync. Amplifier-Sync. Phase Inv.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Vert. Output	6S4	6S4	9AC	
V18	Horiz. Phase Det.	6AL5	6AL5	6BT	
V19	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V20A	Horiz. Output	6AU5	6AU5	6CK	
B	Horiz. Output	6AV5	6AV5	6CK	
V21	Damper	6W4GT	6W4GT	4CG	
V22	HV Rectifier	1B3GT	1B3GT	3C	
V23	LV Rectifier	5Y3GT	5Y3GT	5T	
V24	LV Rectifier	5Y3GT	5Y3GT	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: KAYE-HALBERT PART No.	SYLVANIA PART No.	THOMAS PART No.	RTMA BASE TYPE	NOTES
V25A	17BP4	17BP4A①	17BP4		Models 714, 724, 744, 745, 746, 777
B	19EP4				Model 914 (Alternate Tubes-19AP4, 19DP4)
C	20CP4	20CP4	20CP4		Models 014, 024, 044, 045, 046, 074, 076, 077
D	24AP4				Model 424

① Outer coating must be grounded.

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KAYE-HALBERT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	B6530			UPT44145		R1060	▲ Filter
B	40	400				V2			■ Filter
C	20	400							▲ Horiz. MV Dec.
C2A	40	400	B6530			UPT44145		R1060	▲ Filter
B	40	400				V2			■ Filter
C	20	400							▲ Audio Output Dec.
C3	20	350	B5140	PRS450/20		BR2035A		TVA-1608	Vert. Output Dec.
C4	100	50	B5180	PRS50/100		BRH501		TVA-1310	Vert. Output Cathode
C5	25	50	B5150	PRS50/25		BR255A		TVA-1306	Audio Output Cathdde
C6	5	50	B5120	PRS150/4		BR550		TVA-1303	AF Amp. Cathode
C7	5	50	B5120	PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C8	5	50	B5120	PRS150/4		BR550		TVA-1303	AGC Filter
C9	3-9				829-10				Variable Trimmer
C10	.5-3				829-3				Variable Trimmer
C11	120			SI120	D6-121		GP2K-121	5GA-T12	RF amp. Decoupling
C12	1000			SI1000	D6-102		GP2L-102	5HK-D1	RF Amp. Fil.
C13	100			SI100N750	TCN-100		N750L-101	5TCU-T1	RF Coupling
C14	.5-3				829-3				Variable Trimmer
C15	20			SI20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C16	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C17	.5-3				829-3				Variable Trimmer
C18A	1000			BPD-2X001	DD-2-102		812-001	5HK-2D1	RF Bypass
B	1000								Conv. Fil.
C19	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C20	73						N750L-730		Fixed Trimmer
C21	270	500		1468-0003	D6-271		GP2K-271	MS-33	IF Coupling
C22	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	1st. Video IF Dec.
C23	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	1st. Video IF Cathode
C24	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	1st. Video IF Fil.
C25	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	AGC Filter
C26	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	2nd. Video IF Dec.
C27	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	2nd. Video IF Cathode
C28	54	500							Fixed Trimmer †
C29	10			SI10	D6-100	5W5q1	GP1K-100	5GA-Q1	Fixed Trimmer *
C30	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	3rd. Video IF Dec.
C31	120				TCN-120		N750L-121		Fixed Trimmer
C32	5		B145	SI5	TCZ-4.7	5W5V5	GP1K-050	MS-55	Video Det. Filter
C33	.25	200	B2660	P488-25		GT2P25		2TM-P25	Video Amp. Screen
C34	56		B197	SI56	D6-560		GP1K-560		Fixed Trimmer
C35	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	Video Coupling
C36	.06	600	B2480	P688-005	DF-503	PTE6S5		6TM-S5	Video Coupling
C37	.25	200	B2660	P488-25		GT2P25		2TM-P25	Picture Tube Cathode
C38	.068	600	B2500	P688-068					Vert. Sweep Coupling
C39	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	AGC Filter
C40	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	1st. Sound IF Dec.
C41	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	2nd. Sound IF Dec.
C42	5000		B455	BPD-005	DD-502	ID5D5	811-005	5HK-D5	RF Bypass
C43	82	500	B910				GP1K-820		Diode Load Cap.
C44	.003	600	B2180	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	De-emphasis
C45	.02	400	B2340	P488-02	DF-203	PTE6S2		4TM-S2	Audio Coupling
C46	.003	600	B2180	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Tone Comp.
C47	.02	400	B2340	P488-02	DF-203	PTE6S2		4TM-S2	Audio Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KAYE-HALBERT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C48	.1	400	B2540	P488-1	DF-104	PTE4P1		4TM-P1	AF Amp. Screen
C49A	.005								Audio Coupling
B	250		♦K230		♦PC-70				AF Amp. Plate
C									Audio Output Grid
C50	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C51	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Sync. Coupling
C52	270		B239	SI270	D6-271	5R5T3	GP2K-271	5GA-T27	Sync. Coupling
C53	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C54A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		‡K220	P688-005	‡PC-100	PTE6D5	GP2-333-502	‡101C1	Vert. Integrator Net
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C55	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-S5	Vert. Sync. Coupling
C56	1500		BI510	SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Fixed Trimmer
C57	.1	600	B2560	P688-1	DF-104	PTE4P1		6TM-P1	Vert. Discharge
C58	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	Vert. Sweep Coupling
C59	1000		B270	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C60	1000		B270	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C61	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	AFC Filter
C62	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	AFC Filter
C63	.25	600	B2620	684-25		GP6P25		6TM-P25	Horiz. Feedback
C64	330	500	BI190	1469-00035					Horiz. MV Feedback
C65	4000	500	BI712	1464-004		1DR5D4			Fixed Trimmer
C66	500	500	BI287	1469-0005		5R5T5		MS-35	Horiz. Discharge
C67	.01	400	B2320	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Horiz. Sweep Coupling
C68	.22	400	B2620	P488-22		GT4P25		4TM-P22	Horiz. Output Screen
C69	.22	400	B2620	P488-22		GT4P25		4TM-P22	Horiz. Output Cathode
C70	.033	600	B2980	P688-033		PTE6S3		6TM-S3	Horiz. Feedback
C71	200	2500	B8140						Horiz. Sweep Coupling
C72	100	2500	B8130						Voltage Divider *
C73	.039	600		P688-04		PTE6S5		6TM-S4	Fixed Trimmer
C74	500	20000	B8110	HV20C	TV3-502				HV Filter
C75	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Line Filter
C76	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Line Filter

* Not used in all models.
‡ Some models use 82MMF. in this application.
† Items C54A, C54B, C54C, R72A, R72B, R72C are combined in one unit.
♦ Items C49A, C49B, C49C, R58A, R58B, are combined in one unit.
When replacing separately, C49B and C49C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2000Ω	½		Concentrikit			
B	500KΩ	½	M-116	B11-112 ♬	RTV-293	SBB-637-S	Contrast Control - Front
C	Shaft end			B13-133 ♬			Volume Control - Rear
D	Switch			E-187 ♬			Attach per instructions in Concentrikit
R2A	5000Ω	½	M-110	76-1 ♬	AM-19-S	AN-10	Attach per instructions in Concentrikit
B	Shaft		Not req.	Q11-114	KSS-3	AK-4	Vert. Linearity Control
R3A	2Meg	½	M-106-A	Q11-139	AM-83-S	AN-75	Attach to R2A per instructions
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Height Control
R4A	2Meg	½	M-106-A	Q11-139	AM-83-S	AN-75	Attach to R3A per instructions
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Vert. Hold Control
R5A	500KΩ	½	M-120	Q11-130	AM-58-S	AN-59	Attach to R5A per instructions
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Brightness Control
R6	2250Ω	4	M-112				Attach to R4A per instructions
R7	25KΩ	4	M-128-A				Focus Control - Wire Wound
R8	350Ω	4	M-130				Horiz. Drive Control - Wire Wound
							Horiz. Size Control - Wire Wound

♬ Additional parts to be used with Concentrikit

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KAYE-HALBERT PART No.	IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	3900Ω 20%			BTS-3900	Antenna Coil Shunt
R10	47KΩ			BTS-47K	AGC Network
R11	2200Ω 20%			BTS-2200	RF Amp. Decoupling
R12	9100Ω 5%				RF Coil Shunt - See Note 2
R13	4700Ω 20%			BTS-4700	Mixer Grid
R14	220KΩ			BTS-220K	Mixer Grid
R15	15KΩ 20%			BTS-15K	Mixer Plate
R16	10KΩ			BTS-10K	Osc. Grid
R17	4700Ω			BTS-4700	Osc. Plate †
R18	100Ω		A395	BTS-100	Decoupling
R19	10KΩ		A755		1st. Video IF Amp. Grid
R20	47Ω		A335		1st. Video IF Amp. Cathode
R21	120Ω		A410	BTS-120	1st. Video IF Amp. Cathode
R22	8200Ω		A740	BTS-8200	2nd. Video IF Transformer Shunt
R23	47Ω		A335		2nd. Video IF Amp. Cathode
R24	47Ω		A335		2nd. Video IF Amp. Cathode
R25	100Ω		A395	BTS-100	3rd. Video IF Amp. Cathode
R26	1500Ω		A605	BTS-1500	3rd. Video IF Amp. Decoupling
R27	47KΩ		A875	BTS-47K	Keyed AGC Grid
R28	100KΩ 20%		A935	BTS-100K	AGC Network
R29	22KΩ		A815	BTS-22K	AGC Network
R30	3300Ω 20%		A665	BTS-3300	AGC Network
R31	3900Ω		A680	BTS-3900	Video Det. Diode Load
R32	39KΩ		A860	BTS-39K	Voltage Divider
R33	10KΩ		A755	BTS-10K	Video Amp. Screen
R34	3300Ω		A665	BTS-3300	Video Amp. Plate
R35	22KΩ		A815	BTS-22K	Video Peaking Coil Shunt
R36	39KΩ		A860	BTS-39K	Voltage Divider
R37	39KΩ		A860	BTS-39K	Voltage Divider
R38	470KΩ		A1055	BTS-470K	Video Output Grid
R39	330Ω		A485	BTS-330	Video Output Cathode
R40	3300Ω		A4665	BTB-3300	Video Output Plate
R41	68KΩ		A905	BTS-68K	Picture Tube Grid
R42	150KΩ		A965	BTS-150K	Picture Tube Cathode
R43	10KΩ		A755	BTS-10K	Acc. Anode Load
R44	1.5Meg		A1145	BTS-1.5Meg	DC Restorer Diode Load

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KAYE-HALBERT PART No.	IRC PART No.	IDENTIFICATION CODES
R45	10KΩ		A755		4th. Video IF Transformer Shunt
R46	100Ω		A395	BTS-100	1st. Sound IF Amp. Cathode
R47	1000Ω		A575	BTS-1000	1st. Sound IF Amp. Decoupling
R48	100Ω		A395	BTS-100	2nd. Sound IF Amp. Cathode
R49	1000Ω		A575	BTS-1000	2nd. Sound IF Amp. Decoupling
R50	10KΩ		A755	BTS-10K	Ratio Det. Diode Load
R51	10KΩ		A755	BTS-10K	Ratio Det. Diode Load
R52	270Ω		A470	BTS-270	Balancing
R53	22KΩ		A815	BTS-22K	De-emphasis
R54	1Meg		A1115	BTS-1Meg	AF Amp. Grid
R55	1800Ω		A620	BTS-1800	AF Amp. Cathode
R56	39Ω		A320	BW-½-39	AF Amp. Cathode
R57	1Meg		A1115	BTS-1Meg	AF Amp. Screen
R58A	500KΩ		K230 ♦	BTS-470K	AF Amp. Plate
B	500KΩ			BTS-470K	Output Grid
R59	1000Ω	1	A2575	BTA-1000	Output Cathode
R60	1000Ω	1	A2575	BTA-1000	Decoupling
R61	1000Ω	1	A575	BTS-1000	Feedback
R62	470KΩ		A1055	BTS-470K	Sync. Sep. Grid
R63	4.7Meg		A1235	BTS-4.7Meg	Sync. Sep. Grid
R64	27KΩ 20%		A830	BTS-27K	Sync. Sep. Screen
R65	100KΩ		A935	BTS-100K	Sync. Sep. Plate
R66	18KΩ		A800	BTS-18K	Sync. Sep. Plate
R67	10KΩ		A755	BTS-10K	Voltage Divider
R68	470KΩ		A1055	BTS-470K	Sync. Amp. Grid
R69	3300Ω		A665	BTS-3300	Sync. Amp. Cathode
R70	3900Ω 20%		A680	BTS-3900	Sync. Amp. Plate
R71	27KΩ 20%		A830	BTS-27K	Integrator
R72A	22KΩ		K220 †	BTS-22K	Integrator
■	8200Ω			BTS-8200	Integrator
C	8200Ω			BTS-8200	Integrator
R73	39KΩ		A860	BTS-39K	Integrator
R74	150KΩ		A965	BTS-150K	Vert. Osc. Transformer Shunt
R75	1.2Meg		A1130	BTS-1.2Meg	Vert. Osc. Grid
R76	470KΩ		A1055	BTS-470K	Vert. Osc. Plate - See Note 3
R77	10KΩ		A755	BTS-10K	Vert. Peaking
R78	1Meg		A1115	BTS-1Meg	Vert. Output Grid
R79	1500Ω		A605	BTS-1500	Vert. Output Cathode - See Note 5
R80	2200Ω		A2635	BTA-2200	Decoupling
R81	100KΩ		A935	BTS-100K	Horiz. Phase Det. Diode Load
R82	100KΩ		A935	BTS-100K	Horiz. Phase Det. Diode Load
R83	4.7Meg		A1235	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R84	470KΩ		A1055	BTS-470K	Horiz. AFC Filter
R85	1500Ω		A605	BTS-1500	Horiz. MV Cathode
R86	5600Ω 20%		A710	BTS-5600	Horiz. MV Plate
R87	120KΩ 5%		A945	BTS-120K-5%	Horiz. MV Grid
R88	150KΩ		A965	BTS-150K	Horiz. MV Plate
R89	39KΩ		A860	BTS-39K	Horiz. Drive Control Shunt - See Note 1
R90	68000Ω		A725	BTS-6800	Horiz. Peaking
R91	120Ω				Parasitic Suppressor - See Note 1 and 6
R92	470KΩ		A1055	BTS-470K	Horiz. Output Grid
R93	220Ω	2	A4455	BTB-220	Horiz. Output Cathode
R94	12KΩ	2	A4700	BTB-12K	Horiz. Output Screen - See Note 4
R95	15Ω	½	A245	BW-½-15	Horiz. Feedback
R96	3.3Ω	½	A150		HV Rectifier Filament
R97	560KΩ	1	A7160		HV Filter
R98	2500Ω	15	A6285	2D-2500	Voltage Divider - Wire Wound
R99	1200Ω	1	A2590	BTA-1200	Focus Coil Shunt
R100	270Ω	2	A4470	BW-2-270	Focus Coil Shunt
R101	220KΩ	½	A995	BTS-220K	Isolation
R102	1Meg	½	A1115	BTS-1Meg	Voltage Divider - See Note 1

♦ Items R58A, R58B, C49A, C49B, and C49C are combined into one unit.
† Items R72A, R72B, A72C, C54A, C54B, and C54C are combined into one unit.
Note 1 Not used in all models.
Note 2 Some models use 10KΩ resistor in this application.
Note 3 Some models use 1.8Meg resistor in this application.
Note 4 Some models use series resistors in this application to obtain desired value.
Note 5 Some models use 470Ω resistor in this application.
Note 6 Some models use 47Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: KAYE-HALBERT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② 2A	780VCT .230ADC	5VAC ② 4A	6.3VAC ② 1.2A	C-102		P-3169 ②	TP-392 ②
				SEC. 4 6.3VAC ② 8.2A				

② Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: KAYE-HLABERT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	250Ω	1.4KΩ	C-3102	A-8111 ①	A-3000 ①	TBO-1 ①	Vert. Block Osc. Trans.
T3	190Ω	33Ω	C-2120		HVO-7		Horiz. Output Trans.
	Tap 20Ω	Taps 8.5Ω and 29.5Ω SEC. 2 0Ω					
T4	1.5KΩ Tap 4.3Ω		C-2306		A-3039		Vert. Output Trans.
T5A	18Ω		H-6606	DY-7	MDF-70		
B	46Ω						
T6	170Ω		H3108				Focus Coil

① Drill one new mounting hole.

KAYE-HALBERT MODELS 014, 024, 044, 046, 074, 076, 077, 424, 714, 724, 744, 745, 777, 914

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	5.2KΩ	3.2Ω	590Ω	.6Ω	C2002	A-3877	A-2930	RO-9 ①	① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.230A	40Ω	1.5 Henries	C1002	C-2326 ①	C-2991 ①	TR-3300 ①①	Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	KAYE-HALBERT PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid and Osc. Coil	0Ω				
L5	Fil. Choke	0Ω				
L6	RF Choke	.5Ω				
L7	1st. Video IF	.5Ω				
L8	Coupling Coil	1.1Ω		H2114		
L9	2nd. Video IF	.3Ω	.3Ω	H112		
L10	3rd. Video IF	.3Ω	.3Ω	H112		
L11	Sound Take Off	0Ω	0Ω	H6104		
L12	4th. Video IF	.3Ω	.3Ω	H122		Includes Trap
L13	Peaking	9Ω		H2108	19-1921 †	180 Microhenries wound on 39KΩ resistor (white dot)
L14	Peaking	12Ω		H2116	19-1922	250 Microhenries (green dot)
L15	4.5MC Trap	1.8Ω		H6102		
L16	Peaking	12Ω		H2116	19-1922	250 Microhenries (green dot)
L17	Peaking	7.5Ω		H2112	19-1921 ▲	120 Microhenries wound on 22KΩ resistor (black dot)
L18	Peaking	4.5Ω		H2110	19-1920	93 Microhenries (red dot)
L19	2nd. Sound IF	.1Ω	.1Ω	H118		
L20	Ratio Det. Trans.	.2Ω	.1Ω	H120		Tap .1Ω
L21	Horiz. Osc.	115Ω		H5104		
L22	Horiz. Lin.	5.7Ω	Tap 4.1Ω	H4104		

† Parallel with 39KΩ resistor
▲ Parallel with 22KΩ resistor

FUSES

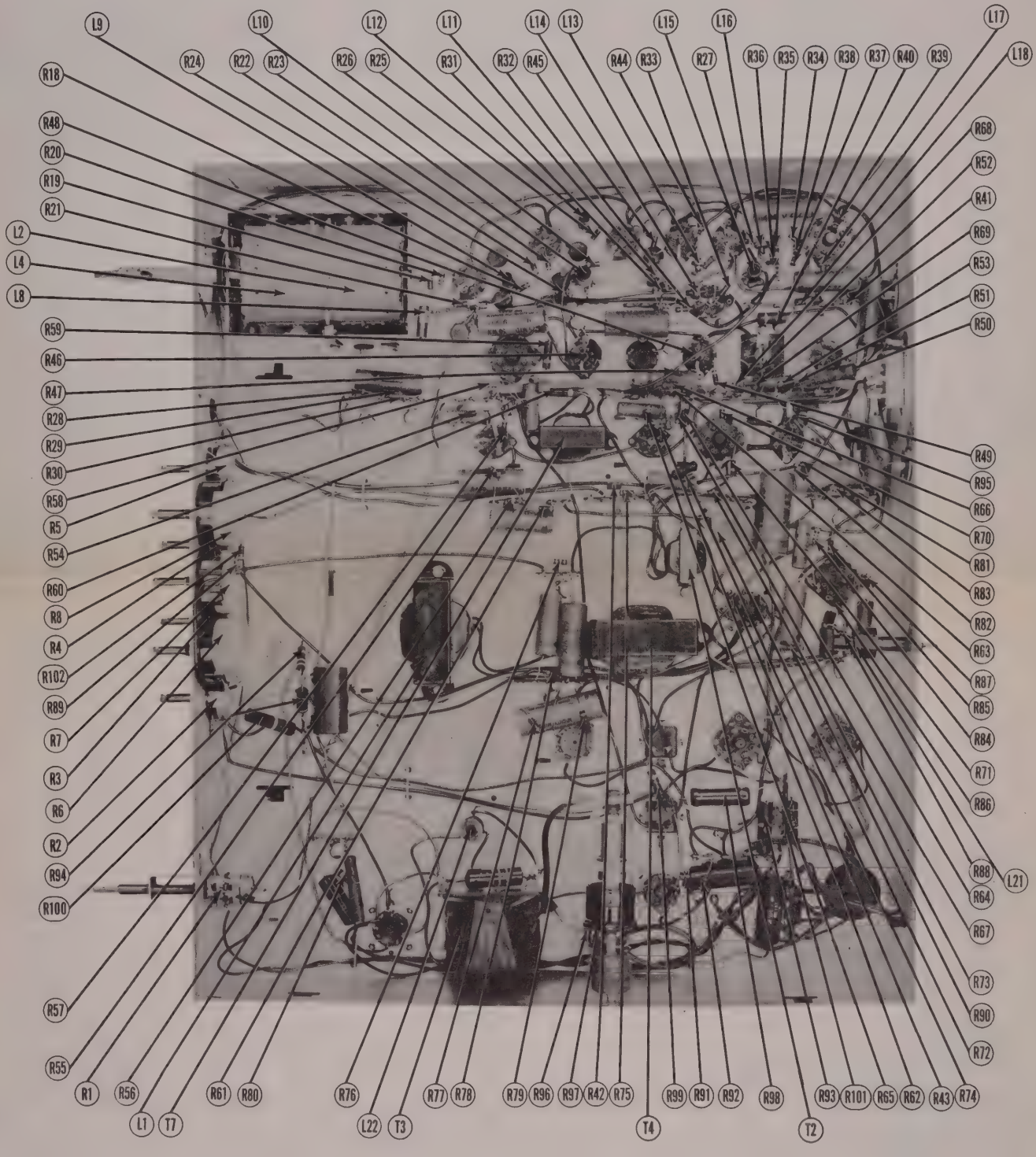
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			KAYE-HALBERT PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG Slo Blo Pigtail	.250A	A-8120		315.250		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					KAYE-HALBERT PART No.		
M2	Bayonet	6-8	.15	Brown			Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	KAYE-HALBERT PART No.	NOTES
M3	RF Tuner	K510	
M4	Switch	R210	TV-Phono



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

RECORDIO
MODEL 1C-10

RECORDIO
MODEL 1C-10

TRADE NAME	Recordio, Model 1C-10
MANUFACTURER	Wilcox-Gay Corp., Charlotte, Michigan
TYPE SET	AC Operated Disc and Tape Recorder with Audio Amplifier
TUBES (FOUR)	Types 6SJ7 Pre Amp.-Bias Osc., 12AX7 AF Amp., 6AQ5 Bias Amp.-Power Output, 6X4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .375 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Wilcox-Gay PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Pre-Amplifier-Bias Oscillator	6SJ7	6SJ7	8N	
V2	AF Amplifier	12AX7	12AX7	9A	
V3	Bias Amplifier-Power Output	6AQ5	6AQ5	7BZ	
V4	Rectifier	6X4	6X4	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: Wilcox-Gay PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350		AFH 3-39		UPT33345		TVL-3782	▲ Filter ‡
B	30	350							■ Filter ‡
C	30	25							▲ Output Cathode ‡
C2A	10	300	18-2040	AFH 3-103		UP1135C		TVL-3628	■ Pre-Amp. Decoupling
B	10	300							▲ AF Amp. Decoupling
C	20	25							AF Amp. Cathode
C3	1000	500	76-2207	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Tone Comp.
C4	.1	200	75-2005	P488-1	DF-104	PTE4P1		2TM-P1	Audio Coupling
C5	1000	500	76-2207	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Pre-Amp. Plate Bypass
C6	.1	400	76-2006	P488-1	DF-104	PTE4P1		4TM-P1	Osc. Feedback
C7	.002	600	75-2054	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Fixed Trimmer
C8	470	500	76-2208	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Tone Comp.
C9	1000	500	76-2207	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Tone Comp.
C10	1000	500	76-2207	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Tone Comp.
C11	100	500		1468-0001	D6-101♦	5W5T1	GP1K-101	1FM-31	Tone Comp. †
C12	.01	400	75-797	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C13	.01	600	♦147-1	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C14	.01	400	75-797	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C15	.01	400	75-797	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C16	.05	400	75-2045	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C17	.01	400	75-797	P488-01	D6-103	PTE6S1	GP2-333-103	4TM-S1	Indicator Coupling
C18	220	500	76-2209	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Indicator Filter
C19	1000		76-2234	S11000	D6-102	1W5D1	GP2L-102	5HK-D1	Tone Comp.
C20	.01	600	75-2058	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C21	.01	600	75-2058	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter

‡ Some models use 12-12-30-30MFD in this application (Mfgrs. Part No. 18-2039)
† Some models use 1000MMF in this application (Mfgrs. Part No. 76-220)
♦ Items C13, R17 are combined into one unit.

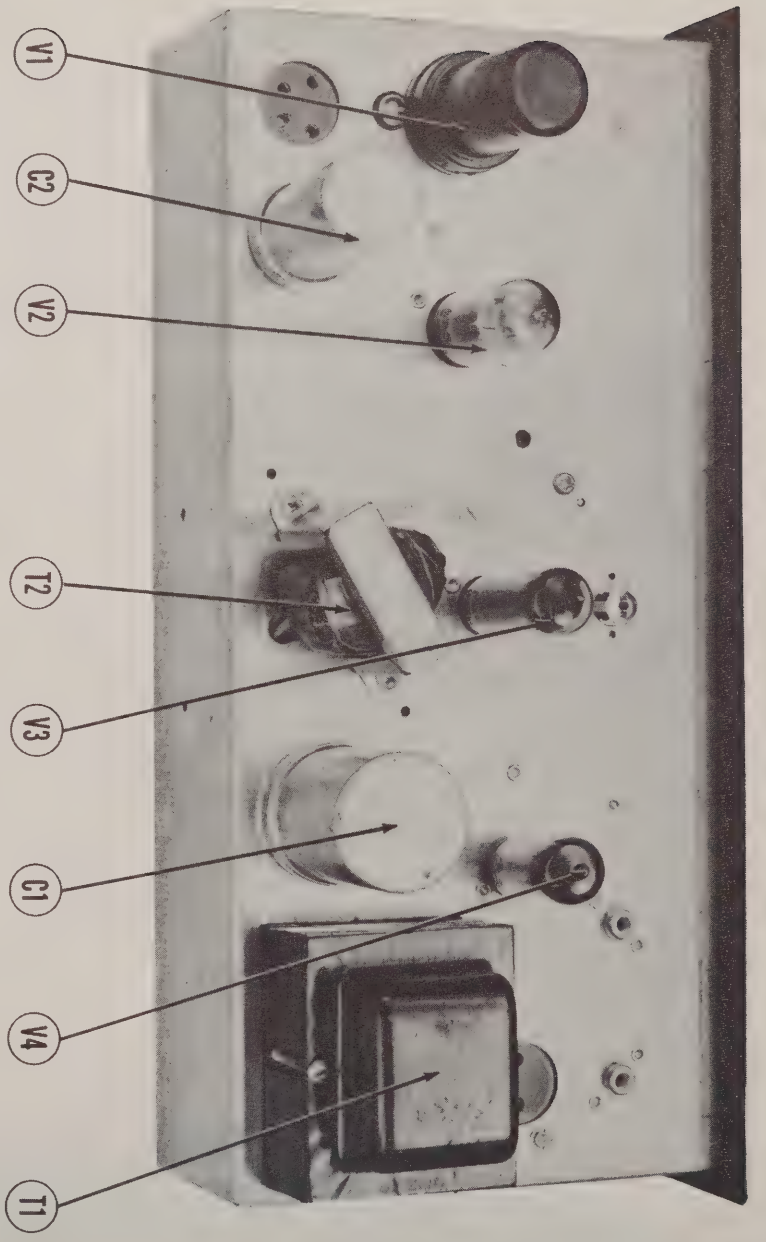
CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: Wilcox-Gay PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	1902182-2	Q13-133	AG-60-Z	B-60-S	Volume Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A Per Instructions
R2A	250KΩ	½	19-2181-2		AG-55-S	B-52	Tone Control
B	Shaft		Not req.		RS-2		Attach to R2A Per Instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: Wilcox-Gay PART No.	IRC PART No.	IDENTIFICATION CODES
R3	100KΩ	½	53-2053	BTS-100K	Tone Compensation
R4	1.5Meg	½	53-2043	BTS-1.5Meg	Pre-Amp. Grid
R5	1000Ω	½	53-2271	BTS-1000	Pre-Amp.-Bias Osc. Cathode
R6	33KΩ	½	53-2641	BTS-33K	Pre-Amp.-Bias Osc. Screen
R7	470KΩ	½	53-2596	BTS-470K	Pre-Amp.-Bias Osc. Screen-See Note 2
R8	56KΩ	½	53-2514	BTS-56K	Pre-Amp.-Bias Osc. Plate
R9	47KΩ	½	53-2516	BTS-47K	Pre-Amp.-Bias Osc. Plate
R10	33KΩ	½	53-2614	BTS-33K	Decoupling
R11	100KΩ	½	53-2053	BTS-100K	Tone Compensation
R12	100KΩ	½	53-2053	BTS-100K	Tone Compensation

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Wilcox-Gay PART No.	IRC PART No.	
R13	100KΩ	½	53-2053	BTS-100K	Tone Compensation
R14	1Meg	½	53-2421	BTS-1Meg	AF Amp. Grid
R15	2200Ω	½	53-2620	BTS-2200	AF Amp. Cathode
R16	100KΩ	½	53-2053	BTS-100K	AF Amp. Plate
R17	10Meg	½	147-1 ♦	BTS-10Meg	AF Amp. Grid
R18	220KΩ	½	53-2551	BTS-220K	AF Amp. Plate
R19	10KΩ	½	53-2268	BTS-10K	Decoupling
R20	47KΩ	½	53-2516	BTS-47K	Isolation
R21	470KΩ	½	53-2596	BTS-470K	Isolation
R22	220KΩ	½	53-2551	BTS-220K	Isolation
R23	100KΩ	½	53-2053	BTS-100K	Voltage Divider
R24	2.2Meg	½	53-2608	BTS-2.2Meg	Voltage Divider
R25	100K	½	53-2053	BTS-100K	Aux. In-Out Shunt
R26	470KΩ	½	53-2596	BTS-470K	Output Grid-See Note 2
R27	330Ω	2	53-2578	BTB-330	Output Cathode
R28	1.5Meg	½	53-2048	BTS-1.5Meg	Feedback
R29	1.5Ω	½	53-2639	BW-½-1.5	Output Transformer Load-Wire Wound
R30	1.8Ω	½	53-2638	BW-½-1.8	Output Transformer Load-Wire Wound
R31	2.2Meg	½	53-2608	BTS-2.2Meg	Indicator Network
R32	220KΩ	½	53-2551	BTS-220K	Indicator Network
R33	390KΩ	½	53-2606	BTS-390K	Indicator Network
R34	470Ω	2		BTB-470	Filter-See Note 1

♦ Items R17 and C13 are combined into one unit.
Note 1 Not used in all models.
Note 2 Some models use parallel resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	Wilcox-Gay PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓐ .375A	500VCT .055ADC			80-2186		P-3051	PV-60 ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Wilcox-Gay PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	3.1KΩ	3.2Ω	325Ω Tap 120Ω	.8Ω			A-3031		

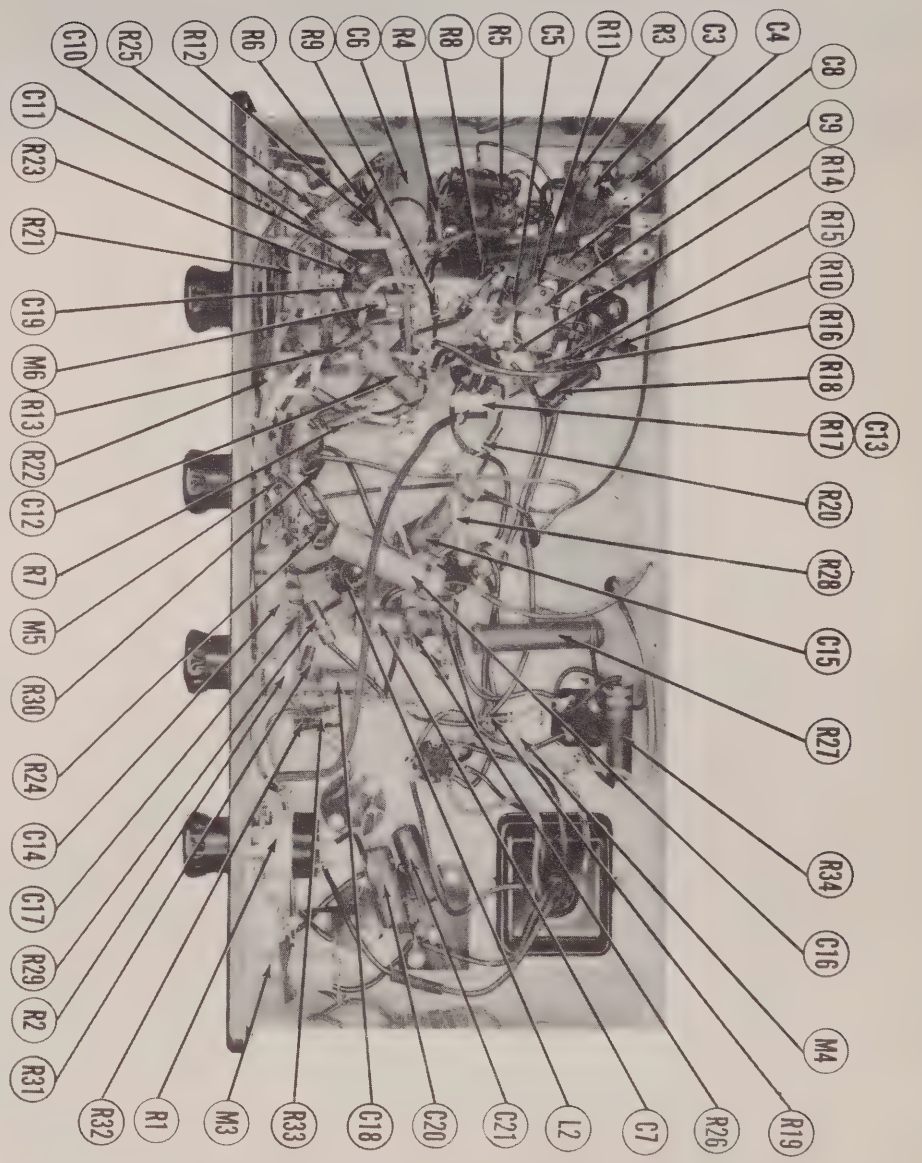
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			Wilcox-Gay PART No.	VIKING PART No.	QUAM PART No.	
	FIELD RES.	V.C. IMP.				
SP1	PM	3.2Ω	64-2094	57J9	57A15	
	CONE DIA.	V.C. DIA.				
SP2	5"X7"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	Wilcox-Gay PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1				14-2097				ⓐ Not used in all models.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	Wilcox-Gay PART No.	MEISSNER PART No.	
L2	Osc. Coil	100Ω		17-3070-A		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	Wilcox-Gay PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1				W56R				

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	Wilcox-Gay PART No.	WALCO PART No.	
M2			

MISCELLANEOUS

ITEM No.	PART NAME	Wilcox-Gay PART No.	NOTES
M3	Neon Bulb	39-2026-A	NE51 (Record Indicator)
M4	Neon Bulb		NE2
M5	Switch	66-3032	Input Function
M6	Switch	66-3033	Output Function

TO USE AS PHONOGRAPH

1. Insert playback needle in crystal.
2. Set left function knob to Play Speaker and right function knob to Play Disc.
3. Turn Volume to On and allow about 30 seconds for tubes to warm up.
4. Slide Turntable Function Knob to Phono.
5. Set Record-Playback arm in Playback position and carefully set playback needle in first groove of record.
6. Adjust Volume and Tone for most pleasing reproduction.

TO RECORD ON TAPE

1. Set Volume at On.
2. Set left function knob at Record Tape.
3. Select desired input on right hand function knob.
4. Pull Recording Lock-In toward you and slide turntable function knob to Record.
5. Adjust volume so that Volume Indicator flashes only on peak passages.

TO PLAY TAPE

1. Set left function knob to Play Speaker.
2. Set right function knob to Play Tape.
3. Turn Volume to On and allow about 30 seconds for tubes to warm up.
4. Slide turntable function knob to Playback.
5. Adjust Volume and Tone for most pleasing reproduction.

TO RECORD ON DISC

1. Insert cutting needle in crystal so that retaining screw tightens up on flat side of needle shank.
2. Place a blank Recordio Disc on the turntable so that the record driving pin engages the small hole near the center of the record.
3. Move the phonograph arm so that the point of the cutting needle is correctly positioned for cutting the first groove, about one-fourth (1/4) of an inch in from the edge of the record. Raise rear of record-playback arm by means of the lift lever so that it locks into recording position.
4. Set left function knob at Record Disc.
5. Select desired input on right function knob (Mike or Aux.).
6. Slide turntable function knob to Phono.
7. Adjust Volume so that Volume Indicator flashes quite steadily.

RECORDING FROM MICROPHONE

1. Set right function knob at Use-Mike.
2. Proceed as in Recording On Disc or Recording on Tape.

TO RECORD FROM DISC TO TAPE

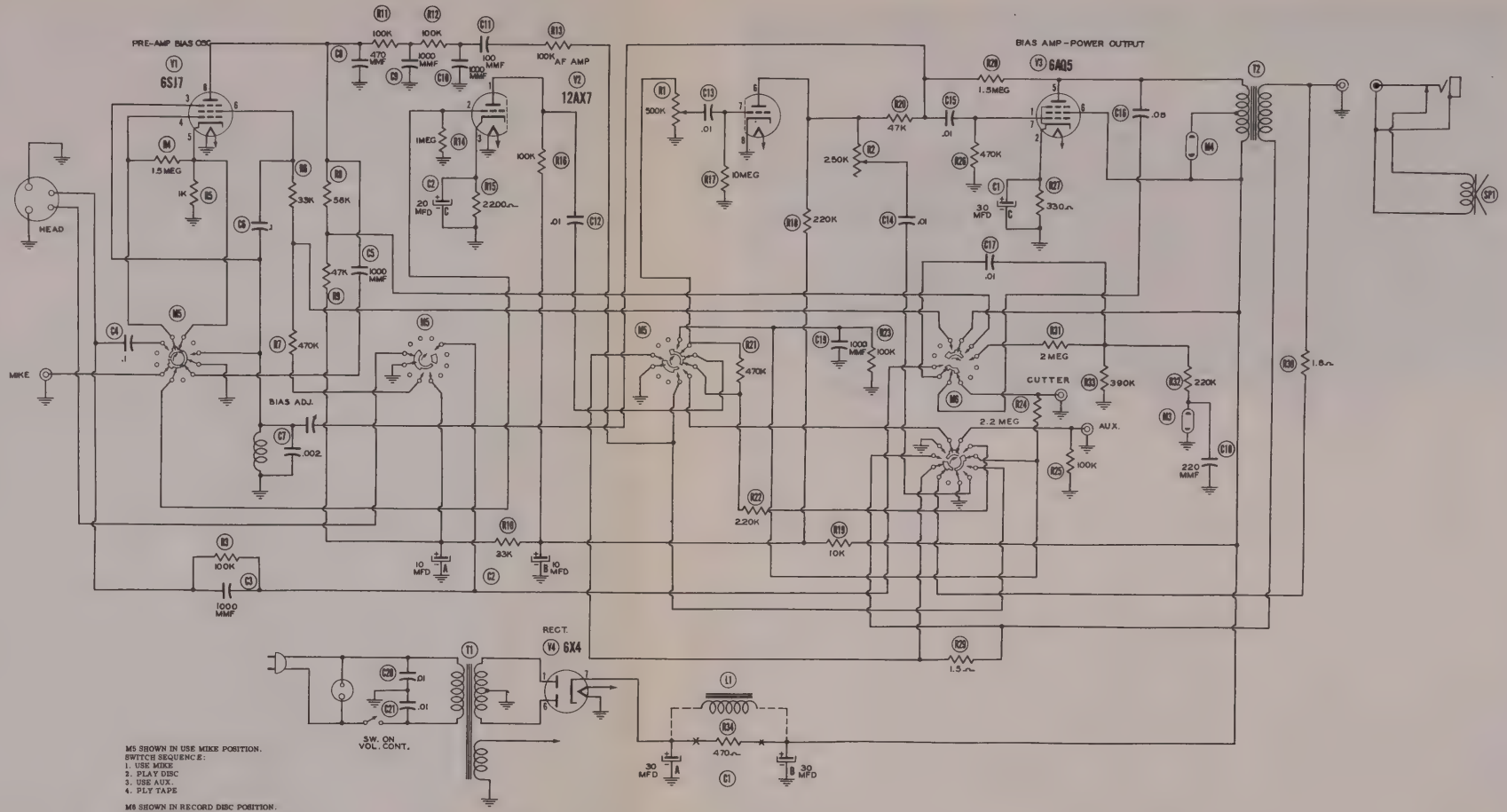
1. Set left function knob at Record Tape.
2. Set right function knob at Play Disc.
3. Pull Recording Lock-In lever toward you and slide Turntable Function Knob to Record.
4. Adjust Volume so that Volume Indicator just flashes on peak passages.

TO RECORD FROM TAPE TO DISC

1. Set right function knob at Play Tape.
2. Set left function knob at Record Disc.
3. Slide turntable function knob to Playback.
4. Adjust Volume so that Volume Indicator flashes quite steadily.

TO USE AS PUBLIC ADDRESS

1. Set Volume at On.
2. Set left function knob at Play Speaker.
3. Set right function knob at Use Mike.
4. Adjust Volume and Tone for most pleasing reproduction. CAUTION: Use the mike as far away from the Recordio as possible to avoid "feed-back" squeal.



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6SJ7	0V	0V	0V	▲9VDC	▲9VDC	▲90VDC	6.3VAC	220VDC	
V 2	12AX7	155VDC	0V	1.6VDC	6.3VAC	6.3VAC	110VDC	-.7VDC	0V	0V
V 3	6AQ5	0V	16VDC	0V	6.3VAC	235VDC	250VDC	0V		
V 4	6X4	245VAC	245VDC	0V	6.3VAC	0V	245VAC	270VDC		

▲ M6 IN RECORD TAPE POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6SJ7	0Ω	0Ω	100Ω	1KΩ	1KΩ	▲†33KΩ	.2Ω	†150KΩ	
V 2	12AX7	†110KΩ	1Meg	2.2KΩ	.2Ω	.2Ω	†230KΩ	10Meg	0Ω	0Ω
V 3	6AQ5	470KΩ	330Ω	0Ω	.2Ω	†830Ω	†470Ω	[illegible]		
V 4	6X4	250Ω	†500Ω	0Ω	.2Ω	Inf.	270Ω	[illegible]		

▲ BOTH FUNCTION SWITCHES FULLY COUNTER CLOCKWISE UNLESS NOTED. † MEASURED FROM PIN 7 OF V4.

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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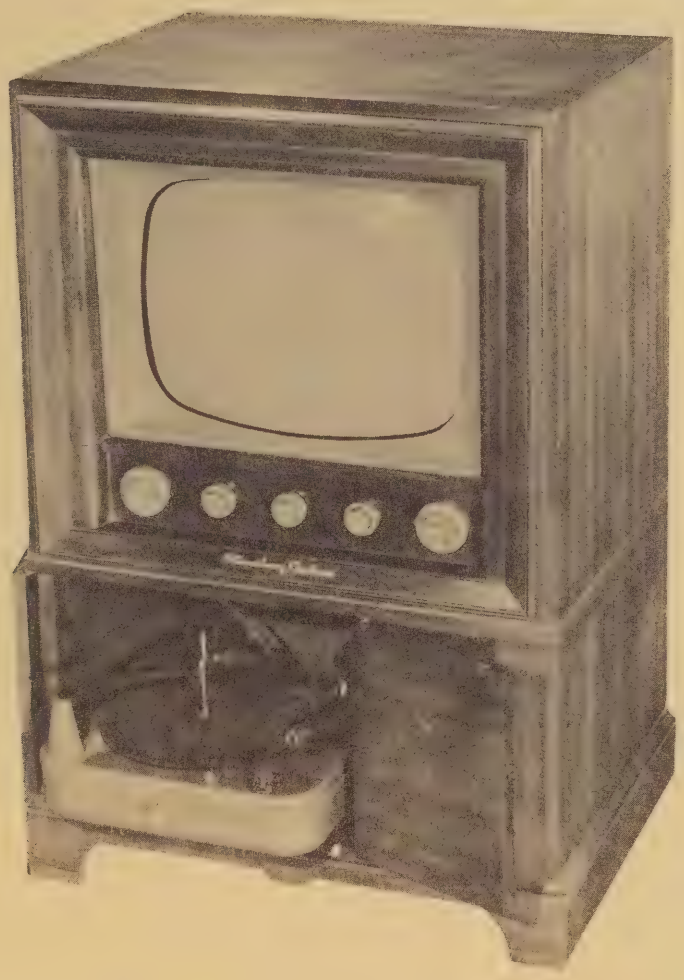

MODEL 317RPM

STROMBERG-CARLSON
MODELS 317RPM, 317TM

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

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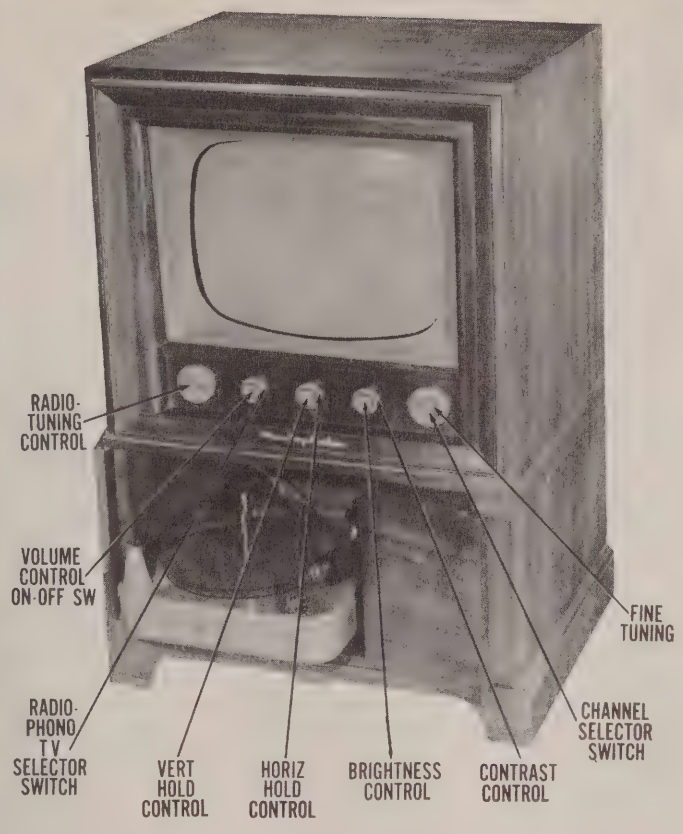
STROMBERG-CARLSON MODELS 317RPM, 317TM



STROMBERG-CARLSON
MODELS 317RPM, 317TM

TRADE NAME	Stromberg-Carlson, Models 317RPM, 317TM
MANUFACTURER	Strombert-Carlson Co., 100 Carlson Rd. Rochester (3), N.Y.
TYPE SET	TV-AM-Phono Combination Receiver (Model 317TM "TV Only")
TUBES	Twenty Five (Model 317TM) Twenty Eight (Model 317RPM)
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	(TV) 2.3 Amp. @ 117 Volts AC (Radio) 1.9 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13 (AM) 540-1620KC

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FOR SERVICE INFORMATION ON RECORD CHANGER UNIT SEE PHOTOFACT FOLDER #13 SET #107 OR RECORD CHANGER CM-3 SECTION 111.

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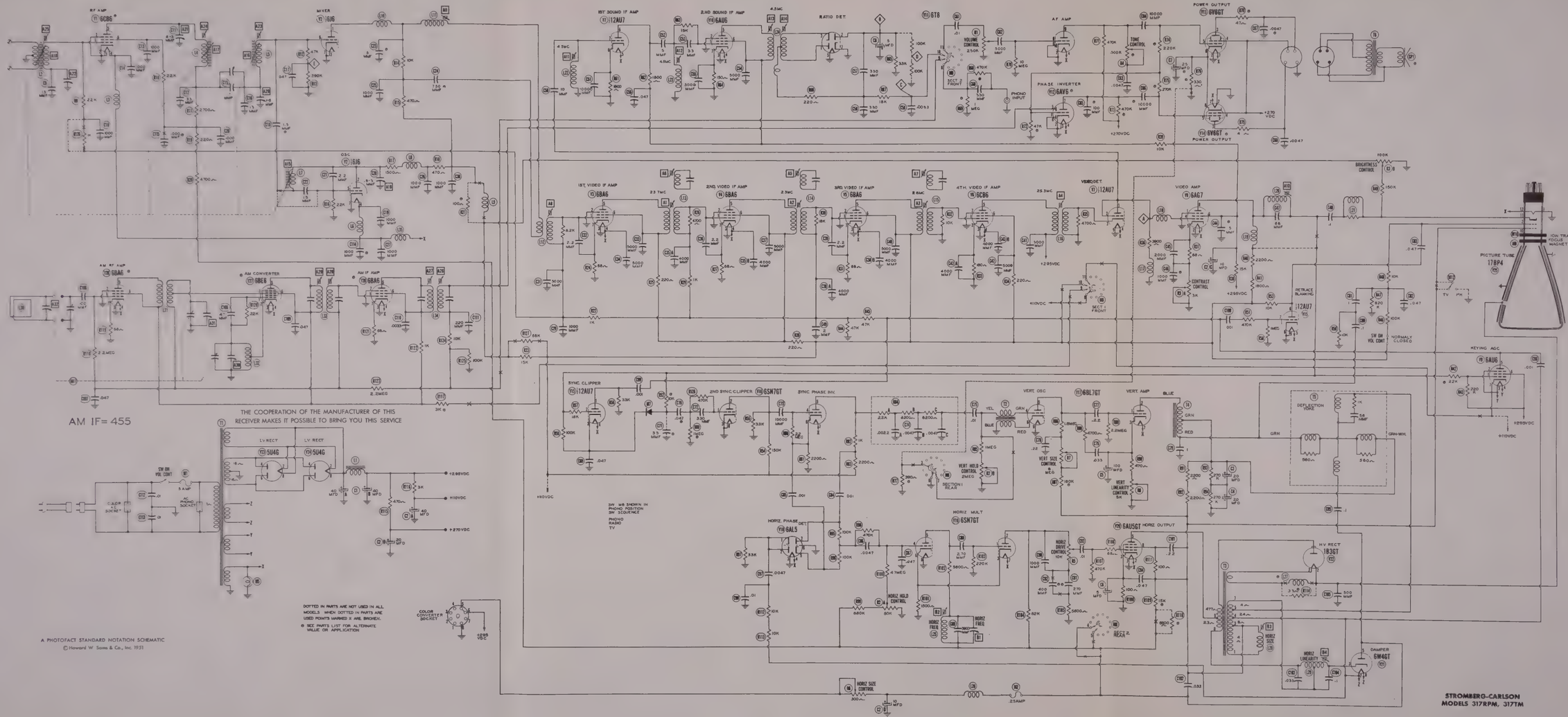
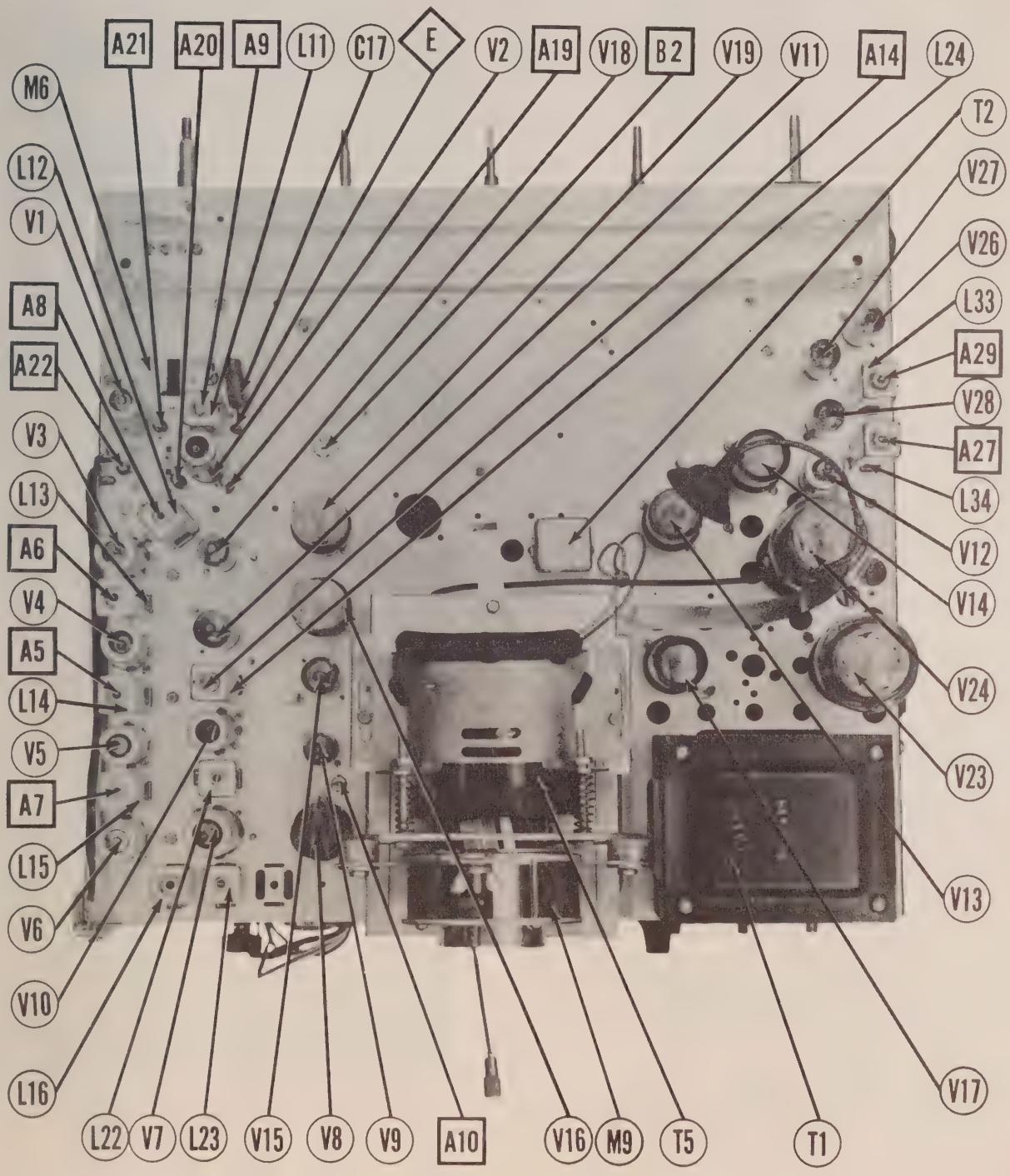
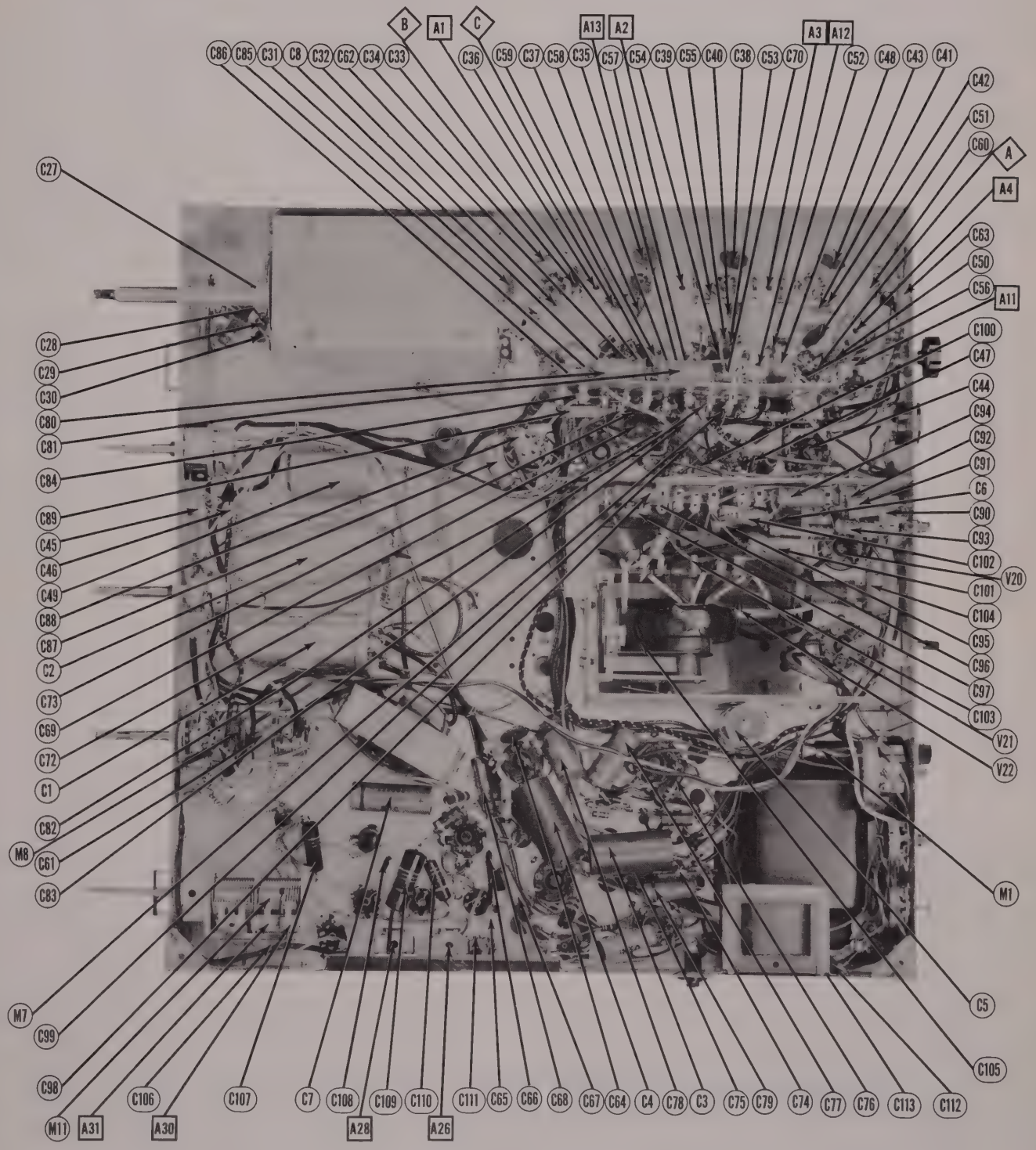
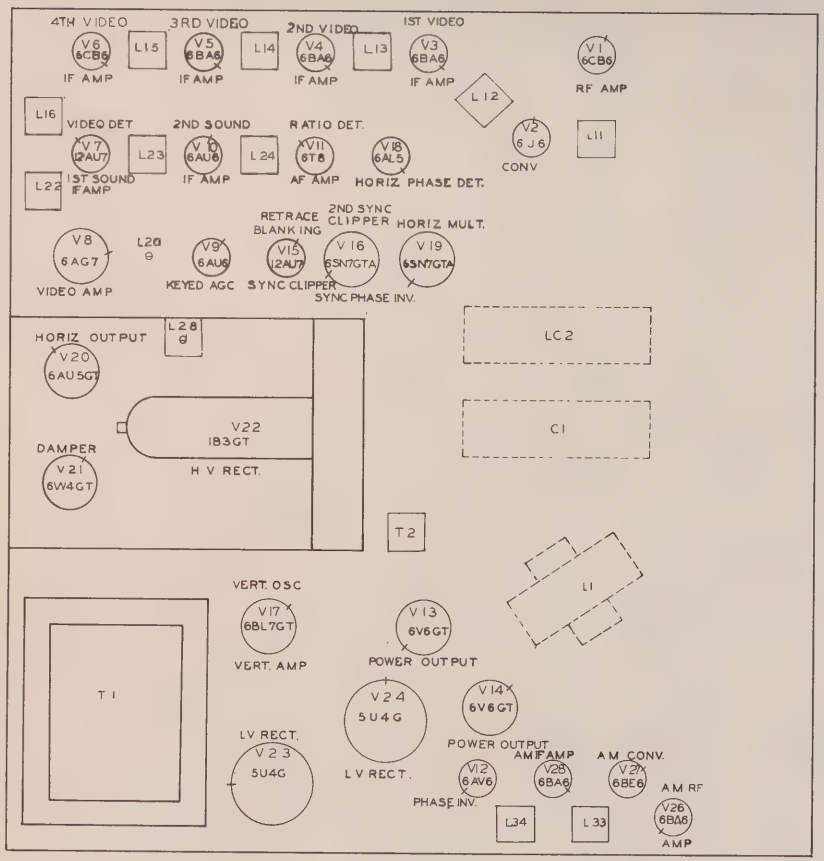

STROMBERG-CARLSON
MODELS 317RPM, 317TM
AM IF= 455
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED ⊙ ARE ENCIRCLED.
⊙ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
SW. M.B. SHOWN IN PHONO POSITION SW. SEQUENCE
PHONO
RADIO
TV
STROMBERG-CARLSON
MODELS 317RPM, 317TM



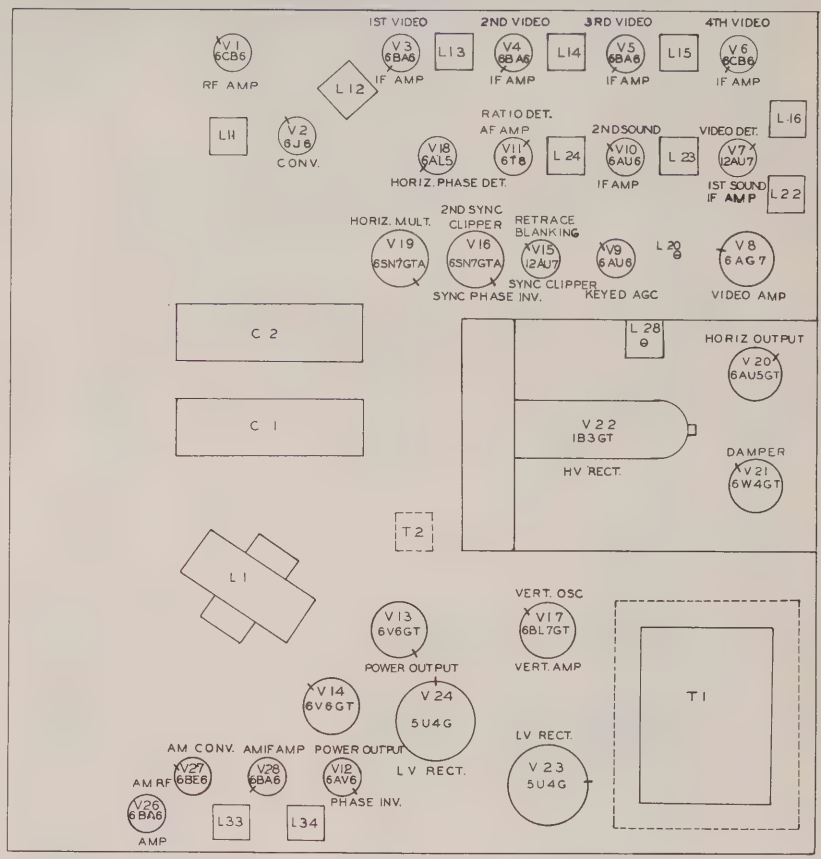
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn the selector switch to "TV."
The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C49, connect the positive lead to chassis.
During video IF alignment attenuate sweep generator to maintain 2 volt peak to peak response.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	100MMF	High side to pin 1, (grid), of 6BA6, (V3). Low side to chassis.	Not used	23.7MC (Unmod.)	Any	USE VTVM DC probe to point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	"	23MC	"	"	A2	"
3.	"	"	"	26MC	"	"	A3	"
4.	"	"	"	25.3MC	"	"	A4	"
5.	"	"	24MC (10MC SWP)	22.7MC 26.4MC	"	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4 for proper response.
6.	"	"	"	21.9MC	"	"	A5, A6	Increase scope gain to expand sound trap area of curve. Adjust A5 for MINIMUM marker indication at 21.9MC point on curve. Adjust trap A6 to the point indicated in fig. 2.
7.	"	"	"	27.9MC	"	"	A7	Adjust A7 for MINIMUM marker indication at the 27.9MC point on response curve. Repeat step 5.
8.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	"	22.7MC 26.4MC	"	"	A8, A9	Adjust for response curve similar to fig. 3.

4.5 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.100MMF	High side to point A. Low side to chassis.	Not used	4.5MC (400~ Mod.)	Any	Vert. amp. thru detector probe, (fig. 7), to pin 11 of picture tube. Low side to chassis.	A10	Adjust for MINIMUM 400~ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point B to chassis. The junction of these two resistors is alignment point D as shown on the

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	100MMF	High side to pin 3 (cathode), of 12AU7, (V7) Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A11, A12, A13	Adjust for maximum deflection.
11.	"	"	"	"	DC probe to point (C). Common to point (D).	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	100MMF	High side to pin 3, (cathode) of 12AU7, (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A11, A12, A13	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per fig. 4.
11.	"	"	"	"	"	Vert. amp. to point (C). Low side to chassis.	A14	Reconnect capacitor C8. Adjust A14 so 4.5MC occurs at center of crossover lines as per fig. 5. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

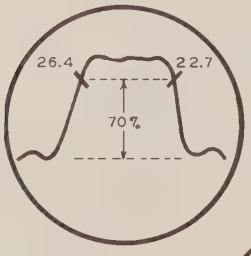


FIG. 1

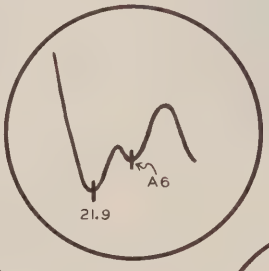


FIG. 2

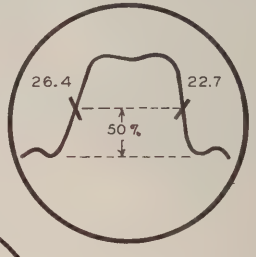


FIG. 3

FIG. 4

FIG. 5

TV ALIGNMENT INSTRUCTIONS (CONT.)

TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Check the cam-frequency setting screws to see that the end of the screws are flush with the cam face.
Connect a 21.9MC marker generator to an ungrounded tube shield floating over the converter tube, (V2).
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	83.25MC 87.75MC	6	Vert. amp. to point E, (disconnect C17). Low side to chassis.	A15	Adjust A15 so sound marker coincides with 21.9MC marker.
13.	"	"	"	"	"	"	A16, A17, A18	Adjust for response curve similar to fig. 6.
14.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"	A19	Adjust A19 so sound marker coincides with 21.9MC marker.
15.	"	"	"	"	"	"	A20, A21, A22	Adjust for response curve similar to fig. 6. Recheck channel 6.
16.	"	"	57MC (10MC SWP)	55.25MC 59.75MC	2	"	A23, A24 A25	Adjust for response curve simialr to fig. 6. Recheck channel 6.
17.	"	"	63MC (10MC SWP)	65.75MC	3	"		Adjust the cam-frequency setting screw on each channel, so the sound marker coincides with the 21.9MC marker.
			69MC (10MC SWP)	71.75MC	4			
			79MC (10MC SWP)	81.75MC	5			
			177MC (10MC SWP)	179.75MC	7			
			183MC (10MC SWP)	185.75MC	8			
			189MC (10MC SWP)	191.75MC	9			
			195MC (10MC SWP)	197.75MC	10			
			201MC (10MC SWP)	203.75MC	11			
			207MC (10MC SWP)	209.75MC	12			

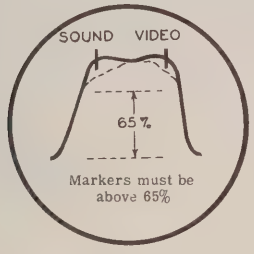


FIG. 6

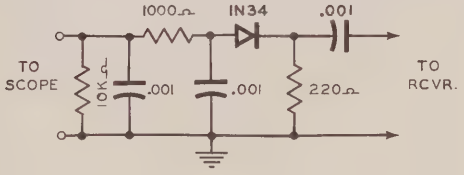


FIG. 7

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn the selector switch to "Radio."
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
18.	.1MFD	High side to pin 7, (grid) of 6BE6, (V2). Low side to chassis.	455KC (400~ Mod.)	AM	Tuning gang fully open.	Across voice coil.	A26, A27 A28, A29	Adjust for maximum output.
19.	"	"	1650KC	"	"	"	A30	"
20.		Loop	1400KC	"	Tune for maximum output.	"	A31, A32	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.1VDC	0V	0V	6.1VAC	200VDC	135VDC	0V		
V 2	6J6	105VDC	90VDC	0V	6.2VAC	§-3.6VDC	-.7VDC	0V		
V 3	6BA6	-.1VDC	0V	0V	6.3VAC	100VDC	100VDC	.8VDC		
V 4	6BA6	-.1VDC	0V	0V	6.3VAC	105VDC	105VDC	.8VDC		
V 5	6BA6	-.1VDC	0V	0V	6.3VAC	110VDC	110VDC	.8VDC		
V 6	6CB6	0V	1.5VDC	0V	6.3VAC	295VDC	105VDC	0V		
V 7	12AU7	-.5VDC	-.5VDC	0V	6.3VAC	6.3VAC	70VDC	0V	2.9VDC	0V
V 8	6AG7	0V	0V	0V	-.5VDC	2VDC 4.9VDC	150VDC	6.3VAC	80VDC	
V 9	6AU6	100VDC	110VDC	¶0V	¶6.3VAC	-.4VDC	295VDC	110VDC		
V 10	6AU6	-.1VDC	0V	0V	6.3VAC	75VDC	75VDC	.9VDC		
V 11	6T8	-.4VDC	-.7VDC	-.4VDC	6.3VAC	0V	0V	0V	-.5VDC	65VDC
V 12	6AV6	-.5VDC	0V	0V	6.3VAC	-.4VDC	0V	41VDC		
V 13	6V6GT	-.5VDC	0V	270VDC	275VDC	-.2VDC	65VDC	6.3VAC	18VDC	
V 14	6V6GT	0V	0V	270VDC	275VDC	-.2VDC	-.5VDC	6.3VAC	18VDC	
V 15	12AU7	-4.2VDC -5.2VDC	75VDC	100VDC	6.3VAC	6.3VAC	100VDC	-25VDC -29VDC	0V	0V
V 16	6SN7GT	-.8VDC	21VDC	0V	.3VDC	90VDC	17VDC	6.3VAC	0V	
V 17	6BL7GT	§0V §-24VDC	480VDC 520VDC	14VDC 36VDC	§-10VDC §-37VDC	24VDC 100VDC	0V	6.3VAC	0V	
V 18	6AL5	0V	0V	0V	6.3VAC	4.7VDC	0V	-.8VDC		
V 19	6SN7GT	§-13VDC	180VDC 190VDC	12VDC	§1.2VDC §2.7VDC	220VDC 250VDC	12VDC	6.3VAC	0V	
V 20	6AU5GT	-13VDC -20VDC	6.3VAC	8.7VDC 9.4VDC	0V	*	0V	0V	150VDC	
V 21	6W4GT	0V	270VDC 295VDC	570VDC	270VDC 295VDC	270VDC 295VDC	270VDC 295VDC	560VDC	560VDC	
V 22	1B3GT	* DO NOT MEASURE.								Top Cap *
V 23	5U4G	150VDC	310VDC	0V	295VAC	0V	295VAC	0V	310VDC	
V 24	5U4G	240VDC	310VDC	220VDC	295VAC	0V	295VAC	0V	310VDC	
V 25	17BP4	0V	0V	Pin 10 540VDC	Pin 11 0V 140VDC	Pin 12 6.3VAC		H.V. Connector ** 11K.V.		
V 26	6BA6	▲-.1VDC	0V	0V	6.3VAC	▲105VDC	▲105VDC	▲.8VDC		
V 27	6BE6	§▲-8VDC	▲0V	0V	6.3VAC	▲105VDC	▲105VDC	▲-.2VDC		
V 28	6BA6	▲-.2VDC	0V	0V	6.3VAC	▲95VDC	▲95VDC	▲.8VDC		

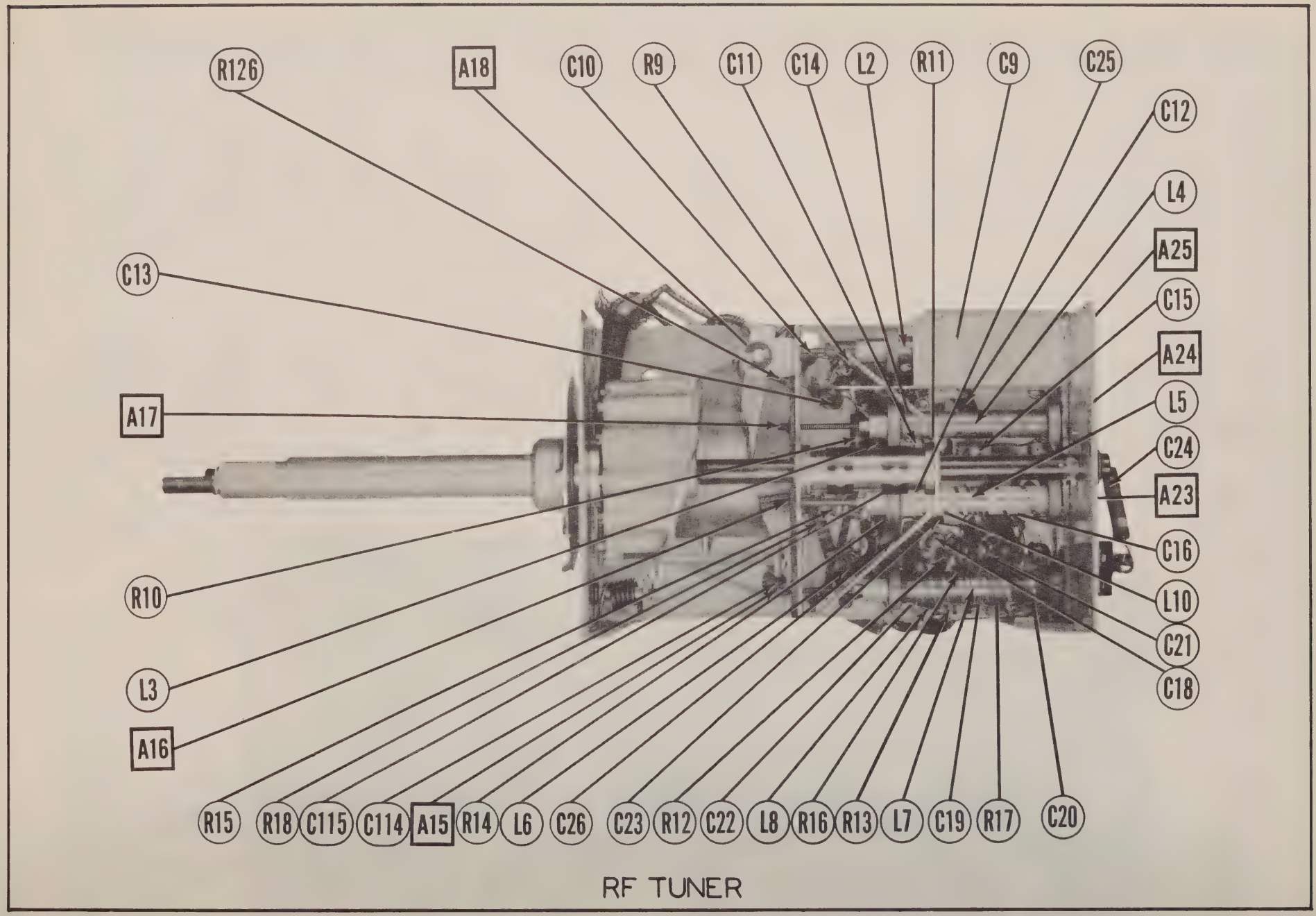
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED.
▲ MEASURED IN AM RADIO POSITION.
¶ MEASURED FROM 110 VDC LINE.
* DO NOT MEASURE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
** USE EXTREME CAUTION WHEN MEASURING THIS VOLTAGE.

RESISTANCE READINGS

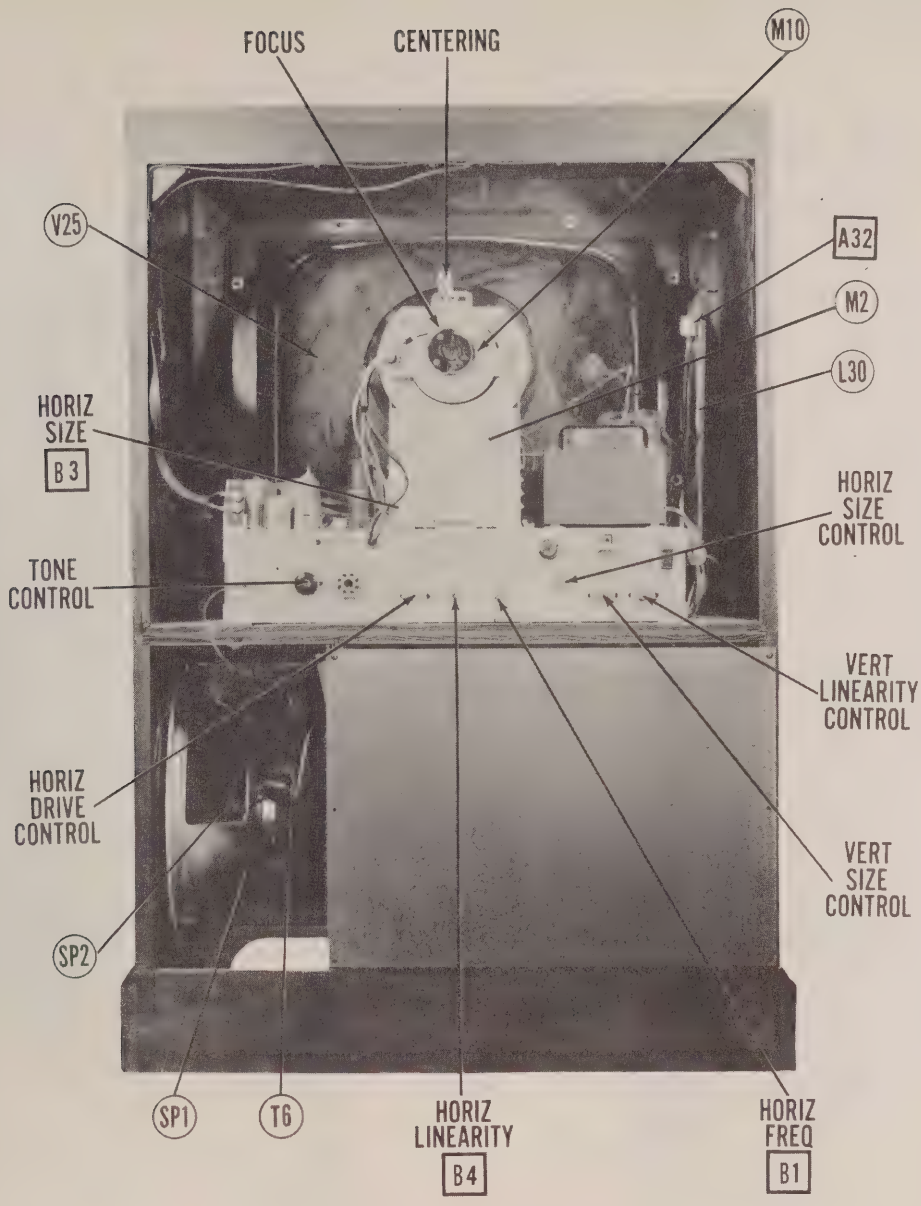
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	70KΩ	0Ω	0Ω	.3Ω	†8KΩ	†27KΩ	0Ω		
V 2	6J6	†25KΩ	†19KΩ	0Ω	.2Ω	22KΩ	435KΩ	0Ω		
V 3	6BA6	48KΩ	0Ω	0Ω	.1Ω	†3.5KΩ	†3.5KΩ	68Ω		
V 4	6BA6	48KΩ	0Ω	0Ω	.1Ω	†3.3KΩ	†3.3KΩ	68Ω		
V 5	6BA6	47KΩ	0Ω	0Ω	.1Ω	†3KΩ	†3KΩ	68Ω		
V 6	6CB6	.4Ω	180Ω	0Ω	.1Ω	†60Ω	†3.3KΩ	0Ω		
V 7	12AU7	3.9KΩ	3.9KΩ	1.2Ω	.1Ω	.1Ω	†27KΩ	3.5Ω	1.8KΩ	0Ω
V 8	6AG7	0Ω	0Ω	0Ω	3.9KΩ	468Ω 68Ω	†15KΩ	.1Ω	†7KΩ	
V 9	6AU6	†29KΩ	†3KΩ	¶0Ω	¶.1Ω	95KΩ	†60Ω	†3KΩ		
V 10	6AU6	15KΩ	0Ω	0Ω	.1Ω	†25KΩ	†25KΩ	150Ω		
V 11	6T8	Inf.	33KΩ	Inf.	.1Ω	0Ω	0Ω	0Ω	10Meg	†470KΩ
V 12	6AV6	47KΩ	0Ω	0Ω	.1Ω	110KΩ	0Ω	†470KΩ		
V 13	6V6GT	47KΩ	0Ω	†760Ω	†530Ω	315KΩ	†500KΩ	.1Ω	330Ω	
V 14	6V6GT	390Ω	0Ω	†760Ω	†530Ω	315KΩ	47KΩ	.1Ω	330Ω	
V 15	12AU7	33KΩ	†25KΩ	†17KΩ	.1Ω	.1Ω	†13KΩ	1Meg	0Ω	0Ω
V 16	6SN7GTA	1.4Meg	†40KΩ	0Ω	2.2Meg	†6.2KΩ	2.2KΩ	.1Ω	0Ω	
V 17	6BL7GT	2.2Meg	#5.6KΩ	5.4KΩ 470Ω	1Meg	#6.8Meg #1.8Meg	210Ω	.1Ω	0Ω	
V 18	6AL5	33KΩ	33KΩ	0Ω	.1Ω	5.7Meg	0Ω	5.7Meg		
V 19	6SN7GTA	220KΩ	†82KΩ	1.5KΩ	4.7Meg	†6.1KΩ †5.8KΩ	1.5KΩ	.1Ω	0Ω	
V 20	6AU5GT	470KΩ	.1Ω	100Ω	Inf.	#26Ω	Inf.	0Ω	†15KΩ	
V 21	6W4GT	Inf.	†360Ω †60Ω	280KΩ	†360Ω †60Ω	†36 Ω †60Ω	†360Ω †60Ω	#30Ω	#30Ω	
V 22	1B3GT	PINS 1-8 HAVE INF. RESISTANCE.								Top Cap #500Ω
V 23	5U4G	†11KΩ	50KΩ	Inf.	16Ω	Inf.	16Ω	Inf.	50KΩ	
V 24	5U4G	130KΩ	50KΩ	†4.7KΩ	16Ω	Inf.	16Ω	Inf.	50KΩ	
V 25	17BP4	0Ω	†100K	Pin 10 #38Ω	Pin 11 †200KΩ †180KΩ	Pin 12 .1Ω				
V 26	6BA6	4.5Meg	0Ω	0Ω	.1Ω	▲6KΩ	▲6KΩ	68Ω		
V 27	6BE6	22KΩ	.5Ω	0Ω	.1Ω	▲6KΩ	▲6KΩ	2.3Meg		
V 28	6BA6	2.3Meg	0Ω	0Ω	.1Ω	▲7KΩ	▲7KΩ	68Ω		

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED.
▲ MEASURED IN AM RADIO POSITION.
† MEASURED FROM PIN 8 OF V23.
# MEASURED FROM PIN 3 OF V21.
¶ MEASURE FROM 110 VDC LINE.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.


R126
A18
C10
R9
C11
C14
L2
R11
C9
C25
C12
L4
A25
C15
A24
L5
C24
A23
C16
L10
C21
C18
C13
A17
R10
L3
A16
R15
R18
C115
C114
A15
R14
L6
C26
C23
R12
C22
L8
R16
R13
L7
C19
R17
C20

RF TUNER



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid position of its range.

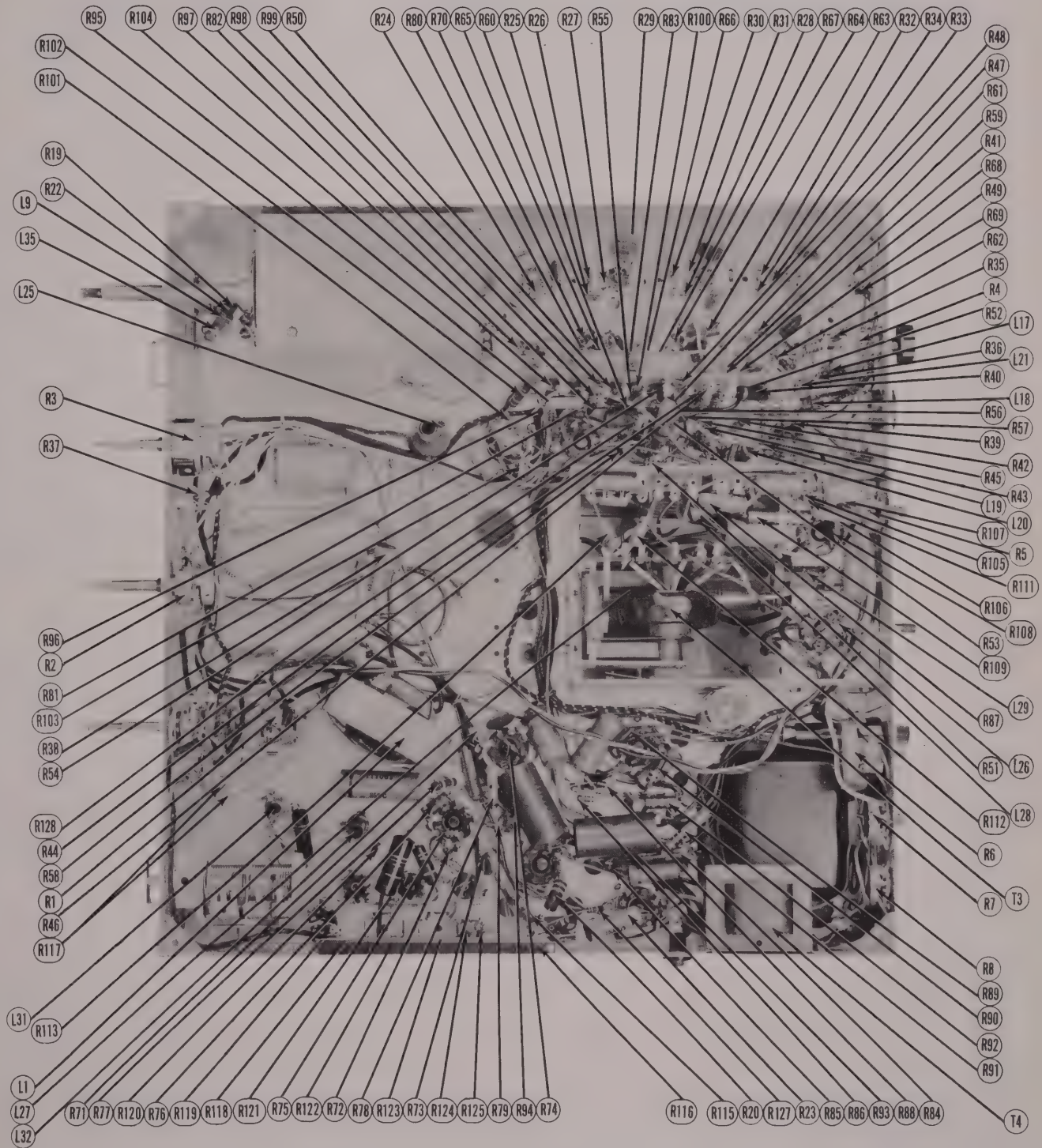
Adjust the horizontal frequency trimmer, (B1), until the picture synchronizes horizontally. If B1 shows insufficient range, adjust it to the center of its range and adjust the horizontal frequency slug, (B2), until the picture synchronizes.

Adjust the horizontal drive control clockwise as far as possible without crowding or bright vertical lines appearing in the picture.

Adjust the horizontal size control until the picture is slightly wider than necessary to fill the mask horizontally. In some cases, especially low line voltage, it may be necessary to also adjust the width slug, (B3), located inside the high voltage compartment.

Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right.

Since both width and linearity are effected by the drive control, it may be necessary to adjust these three alternately for optimum results.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Stromberg Carlson PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	162092	6CB6	6CK	
B	RF Amplifier	162021	6AG5	7BD	
V2	Converter	162118	6J6	7BF	
V3	1st Video IF Amp.	162012	6BA6	7BK	
V4	2nd Video IF Amp.	162012	6BA6	7BK	
V5	3rd Video IF Amp.	162012	6BA6	7BK	
V6	4th Video IF Amp.	162092	6CB6	6CK	
V7	Video Detector-1st Sount IF Amp.	162042	12AU7	9A	
V8	Video Amplifier	162023	6AG7	8Y	
V9	Keyed AGC	162032	6AU6	7BK	
V10	2nd Sound IF Amp.	162032	6AU6	7BK	
V11	Ratio Detector-AF Amplifier	162077	6T8	9E	
V12	Phase Inverter	162066	6AV6	7BT	Used only in Model 317 RPM.
V13	Power Output	162136	6V6GT	7AC	
V14	Power Output	162136	6V6GT	7AC	Used only in Model 317 RPM.
V15	Retrace Blanking 1st Sync. Clipper	162042	12AU7	9A	
V16	2nd Sync. Clipper Sync. Phase Inv.	162018	6SN7GTA	8BD	
V17	Vert. Oscillator-Vert. Amplifier	162102	6BL7GT	8BD	
V18	Horiz. Phase Det.	162022	6AL5	6BT	
V19	Horiz. Mult.	162018	6SN7GTA	8BD	
V20	Horiz. Output	162087	6AU5GT	6CK	
V21	Damper	162079	6W4GT	4CG	
V22	HV Rectifier	162029	1B3GT	3C	
V23	LV Rectifier	162107	5U4G	5T	
V24	LV Rectifier	162107	5U4G	5T	
V26	AM RF Amplifier	162012	6BA6	7BK	Used only in Model 317 RPM.
V27	AM Converter	162013	6BE6	7CH	
V28	AM IF Amplifier	162012	6BA6	7BK	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Stromberg Carlson PART No.	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: THOMAS PART No.	RTMA BASE TYPE	NOTES
V25	17BP4	17BP4	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stromberg Carlson PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	111095	AFH2-57		UPT4445		TVL-2764	● Filter
B	40	450							▲ Filter
C2A	40	450	111094	AFH4-18		UPT421145		TVL-4840	● Filter
B	20	450							■ Audio Output Dec.
C	10	450							▲ Video Amp. Screen Decoupling
D	10	450							
C3	20	300	111089	PRS450/20		BR2035A		TVA-1608	Vert. Output Decoupling
C4	20	300	111089	PRS450/20		BR2035A		TVA-1608	Vert. Output Decoupling
C5	100	50	111097	PRS50/100		BRH501		TVA-1310	Vert. Output Cathode
C6	5	50	111047	PRS150/4		BR550		TVA-1303	Horiz. Output Cathode
C7	25	25	111069	PRS25/25		BR252A		TVA-1205	Audio Output Cathode †
C8	5	50	111047	PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C9	13		171143				N150K-130		RF Amp. Grid
C10	1000		171158	BPD-001	DD-102		801-001	5HK-D1	AGC Filter
C11	.8-3		171131		829-3				Variable Trimmer
C12	33		171145	SI33	D6-330		GP1K-330	5GA-Q33	RF Amp. Plate Dec.
C13	1000		171158	BPD-001	DD-102		801-001	5HK-D1	RF Amp. Screen
C14	1000		171158	BPD-001	DD-102		801-001	5HK-D1	RF Amp. Fil.
C15	7		171144				N330K-070		Fixed Trimmer
C16	13		171143				N150K-130		Fixed Trimmer
C17	.047	400	110722	P488-047	DF-503			4TM-S47	Mixer Grid Filter
C18	1.5			SI1.5NPO	TCZ-1.5		NPOK-1R5		RF Coupling ‡
C19	1000		171158	BPD-001	DD-102		801-001	5HK-D1	Conv. Fil.
C20	.8-3		171131		829-3				Variable Trimmer
C21	2.2		171148		TCZ-22		NPOK-2R2		Fixed Trimmer
C22	15		171149				N470K-150		Osc. Grid Cap.
C23	5			SI5			GP1K-050		Fixed Trimmer ¶
C24	1000			SI1000	D6-102		GP2L-102	5HK-D1	RF Bypass ‡ ‡
C25	1000		171158	BPD-001	DD-102		801-001	5HK-D1	Mixer Plate Dec.
C26	1000		171158	BPD-001	DD-102		801-001	5HK-D1	Osc. Plate Dec.
C27	1000		110050	BPD-001	DD-102		801-001	5HK-D1	Fil. Bypass
C28	1000		110050	BPD-001	DD-102		801-001	5HK-D1	RF Bypass
C29	1000		110050	BPD-001	DD-102		801-001	5HK-D1	AGC Filter
C30	1000		110050	BPD-001	DD-102		801-001	5HK-D1	RF Bypass
C31	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AGC Filter
C32	2.2		110439		TCZ-2.2		NPOK-2R2		Fixed Trimmer
C33	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st Video IF Dec.
C34	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st Video IF Fil.
C35A	4000		110685	BPD-2X004	D6-402	1D5D4	822-004	5HK-2D4	AGC Filter
B	4000				D6-402	1D5D4			2nd Video IF Fil.
C36	2.2		110439		TCZ-2.2		NPOK-2R2		Fixed Trimmer
C37	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd Video IF Dec.
C38A	4000		110685	BPD-2X004	D6-402	1D5D4	822-004	5HK-2D4	AGC Filter
B	4000				D6-402	1D5D4			3rd Video IF Fil.
C39	2.2		110439		TCZ-2.2		NPOK-2R2		Fixed Trimmer
C40	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	3rd Video IF Dec.
C41	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	4th Video IF Plate
C42	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	4th Video IF Screen
C43A	4000		110685	BPD-2X004	D6-402	1D5D4	822-004	5HK-2D4	4th Video IF Cathode
B	4000				D6-402	1D5D4			4th Video IF Fil.
C44	5			SI5		5W5V5	GP1K-050	MS-55	Video Amp. Screen * *
C45	2000		110652	SI2000	D6-202	1W5D2	GP2-333-202	5HK-D2	Video Amp. Cathode
C46	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Contrast Cont. Shunt ‡ ‡
C47	68	500		1469-00007	TCZ-68	5R5Q7	NPO-333-680	MS-47	Fixed Trimmer
C48	.1	200	110415	P488-1	D6-104	PTE4P1		2TM-P1	Video Coupling

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Stromberg-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C49	3	50	110675	P282-2					AGC Filter
C50	10		110496				N150K-100		Sound IF Coupling
C51	10000		110672	BPD-01	DD-103	1D3S1	821-01	5HK-S1	1st Sound IF Cathode
C52	5		110698	S15		5W5V5	GP1K-050		Sound IF Coupling
C53	33		110486	SI33	D6-330		GP1K-330	5GA-Q33	Sound IF Coupling
C54	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd Sound IF Dec.
C55	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd Sound IF Cathode
C56	.047	200	110660	P488-047	DF-503	PTE4S5		2TM-S47	RF Bypass
C57	330		110454	SI330	D6-331		GP2K-331	5GA-T33	RF Bypass
C58	330		110454	SI330	D6-331		GP2K-331	5GA-T33	RF Bypass
C59	.0033	400	110715	P688-0033	D6-332	PTE6D3	GP2-333-332	6TM-D3	De-Emphasis
C60	330		110454	SI330	D6-331		GP2K-331	5GA-T33	Tone Comp. †
C61	.01	400	110718	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C62	5000		110586	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Audio Coupling
C63	.0047	600	110735	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Tone Comp.
C64	10000		110672	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling
C65	100		110694	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	Phase Inv. Plate †
C66	10000		110672	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling †
C67	.0047	1000	110754	P1088-0047		PTE1D5		MB-D47	Audio Output Plate †
C68	.0047	1000	110754	P1088-0047		PTE1D5		MB-D47	Audio Output Plate
C69	.047	400	110722	P488-047	DF-503	PTE4S5		4TM-S47	1st Sync. Clipper Cath.
C70	.047	400	110722	P488-047	DF-503	PTE4S5		4TM-S47	Sync. Coupling ††
C71	33		110486		S133	D6-330	GP1K-330	5GA-Q33	RF Bypass *
C72	330		110483		SI330	D6-331	GP2K-331	5GA-T33	Sync. Coupling
C73	10000		110672	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sync. Coupling
C74A	.0022		P688-0022			PTE6D2	GP2-333-222		Vert. Integrator Net.
B	.0047		P688-0047	‡128200	‡PC-100	PTE6D5	GP2-333-472	‡101C1	Vert. Integrator Net.
C	.0047		P688-0047			PTE6D5	GP2-333-472		Vert. Integrator Net.
C75	.01	400	110718	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Vert. Sweep Coupling
C76	.033	600	110740	P688-033					Vert. Discharge
C77	.22	400	110726	P488-22		GT2P25		4TM-P22	Vert. Sweep Coupling
C78	.22	400	110726	P488-22		GT2P25		4TM-P22	Vert. Osc. Dec.
C79	.1	400	110724	P488-1	DF-104	PTE4P1		4TM-P1	Fixed Trimmer
C80	.1	400	110724	P488-1	DF-104	PTE4P1		4TM-P1	Vert. Sweep Coupling
C81	.1	400	110724	P488-1	DF-104	PTE4P1		4TM-P1	Vert. Sweep Coupling
C82	.047	200	110660	P288-047	DF-503	PTE4S5		2TM-S47	Voltage Divider
C83	.047	400	110722	P488-047	DF-503	PTE4S5		4TM-S47	Retrace Blank. Coupling
C84	.001	400	110712	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C85	.001	400	110712	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C86	.0047	400	110716	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Horiz. Sync. Coupling
C87	.047	400	110722	P488-047	DF-503	PTE4S5		4TM-S47	Horiz. MV Grid
C88	270	500	110208	1469-0003		5R5T3		MS-33	Horiz. MV Feedback
C89	3900	500	110309	1464-004		1DR5D4			Fixed Trimmer
C90	1000	500	110210	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Drive Cont. Shunt
C91	270	500	110208	1469-0003	D6-271	5R5T3	GP2K-271	MS-33	Horiz. Discharge † †
C92	400	500		1468-0004		1FM-34		1FM-34	Horiz. Discharge *
C93	.01	600	110737	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Horiz. Sweep Coupling
C94	.047	400	110722	P488-047	DF-503	PTE4S5		4TM-S47	Horiz. Output Screen
C95	.1	400	110724	P488-1	DF-104	PTE4P1		4TM-P1	Horiz. Sweep Coupling
C96	.001	600	110712	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sweep Coupling
C97	.0047	400	110716	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Horiz. Feedback
C98	.01	600	110737	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Integrator Net.
C99	.001	600	110712	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sweep Coupling
C100	.001	600	110712	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sweep Coupling
C101	.22	400	110726	P488-22		GT2P25		4TM-P22	Accelerating Anode Dec.
C102	.033	400	110721	P488-033					Accelerating Anode Dec.
C103	.033	400	110721	P488-033					Damper Filter
C104	.1	400	110724	P488-1	DF-104	PTE4P1		4TM-P1	Damper Filter
C105	500	20000	110893	HV20C	TV3-502				HV Filter
C106	100			SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Coupling †
C107	.047	200	110660	P288-047	DF-503	PTE4S5		2TM-S47	AVC Filter
C108	47		110695	SI47	D6-470	5R5Q5	GP1K-470	5GA-Q47	Osc. Grid Cap. †
C109	.047	600	110659	P688-047	DF-503	PTE6S5		6TM-S47	Osc. Anode Dec. †
C110	.0033	600	110552	P688-0033	D6-332	PTE6D3	GP2-333-332	6TM-D3	IF Amp. Dec. †
C111	220		110463	SI220	D6-221	5R5T25	GP2K-221	5GA-T22	Diode RF Filter †
C112	.01	1000	110756	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C113	.01	1000	110756	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C114	1000		171158	BPD-001	DD-102		GP2L-102	5HK-D1	Fil. Bypass *
C115	1000		171158	BPD-001	DD-102		GP2L-102	5HK-D1	RF Bypass *

* Not used in all models.
† Used in Model 317RPM only.
♦ Items C74A, C74B, C74C, R84A, R84B, R84C are combined into one unit.
‡ Some models use 4.7MMF in this application.
¶ Some models use 10MMF in this application (Mfgrs. Part No. 171146)
** Some models use .01MFD in this application (Mfgrs Part No. 110672)
†† Some models use 750MMF in this application (Mfgrs Part No. 110213)
¶¶ Some models use .1MFD in this application (Mfgrs. Part No. 110546)
‡‡ Some models use 680MMF in this application (Mfgrs. Part No. 110279)

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Stromberg-Carlson PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	250KΩ	½	145130	QI3-130	AG-64-2		Volume Control
B	Shaft		Not Req.	RQ	FKS-1/4		Attach to R1A Per Instructions
C	Switch		Not Req.	T6-2	SWB-2		Attach to R1A Per Instructions
R2A	50KΩ	½	145128	Concentrikit			Horiz. Hold Control-Front
B	2Meg	½		BII-123 ♯			Vert. Hold Control-Rear
C	Shaft End			BII-139 ♯	RTV-75		Attach Per Instructions in Concentrikit
R3A	300Ω	2		E-187 ♯			Contrast Control-Wire Wound-Front
B	100KΩ	½	145129				Brightess Control-Rear
R4A	500KΩ	½	145133	QI3-133	AG-60-Z	B-60	Tone Control-See Note 1
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R4A Per Instructions
R5A	10KΩ	½	145132	QII-116	AG-27-S	AN-14	Horiz. Drive Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6	300Ω	4	145123		RTV-94		Horiz. Size Control-Wire Wound
R7A	6Meg	½	145100		AM-86-S		Vert. Size Control
B	Shaft		Not Req.		FKS-1/4		Attach to R7A Per Instructions
R8A	5000Ω	½	145079	QII-114	AG-19-S	AN-10	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R8A Per Instructions

♯ Additional parts to be used with concentrikit.
Note 1 Used in Model 317 RPM only.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Stromberg Carlson PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE SPECIFIED.
R9	22KΩ	½	149109		RF Amp. Grid
R10	22KΩ 20%	½	149109		RF Amp. Screen
R11	2700Ω	½	28163	BTS-2700	RF Amp. Plate Decoupling
R12	47KΩ 20%	½	149111		Mixer Grid
R13	390KΩ	½	28166		Mixer Grid
R14	10KΩ 20%	½	149107		Mixer Plate
R15	470Ω	½	28154	BTS-470	Mixer Plate Decoupling
R16	22KΩ 20%	½	149109		Osc. Grid
R17	1500Ω	½	28160	BTS-1500	Osc. Plate
R18	470Ω	½	28154	BTS-470	Osc. Plate Decoupling
R19	220Ω 20%	½	149097	BTS-220	Decoupling
R20	4700Ω 20%	2	149080	BTB-4700	Decoupling
R21	100Ω	½	149095	BTS-100	Decoupling-See Note 4
R22	1000Ω 20%	½	149101	BTS-1000	AGC Network
R23	15KΩ	5	33912	1 3/4A-15K	Voltage Divider-Wire Wound
R24	68Ω	½	28144		1st Video IF Amp. Cathode
R25	220Ω 20%	½	149097	BTS-220	1st Video IF Amp. Decoupling
R26	4700Ω 20%	½	28166	BTS-4700	2nd Video IF Transformer Shunt
R27	68Ω	½	28144		2nd Video IF Amp. Cathode
R28	220Ω 20%	½	149097	BTS-220	Decoupling
R29	1000Ω 20%	½	149101	BTS-1000	AGC Network
R30	18KΩ	½	28173	BTS-18K	3rd Video IF Transformer Shunt
R31	68Ω	½	28144		3rd Video IF Amp. Cathode
R32	10KΩ 20%	½	28170	BTS-10K	4th Video IF Transformer Shunt
R33	180Ω	½	28149	BTS-180	4th Video IF Amp. Cathode
R34	220Ω 20%	½	149097	BTS-220	4th Video IF Amp. Screen
R35	4700Ω 20%	½	28166	BTS-4700	5th Video IF Transformer Shunt
R36	3900Ω	1	28165	BTA-3900	Video Det. Diode Load
R37	68Ω	½	28144		Video Amp. Cathode
R38	15KΩ	5	33912	1 3/4A-15K	Video Amp. Screen-Wire Wound
R39	10KΩ 20%	1	149144	BTA-10K	Decoupling
R40	2200Ω	2	149048	BTB-2200	Video Amp. Plate
R41	1800Ω	2	149047	BTB-1800	Video Amp. Plate
R42	22KΩ 20%	½	149109	BTS-22K	Keyed AGC Grid-See Note 5
R43	220KΩ	½	28183	BTS-220K	AGC Network
R44	47KΩ 20%	½	149111	BTS-47K	AGC Network
R45	47KΩ 20%	½	149111	BTS-47K	AGC Network
R46	100KΩ 20%	½	149113	BTS-100K	Bias Network
R47	820KΩ	½	28190	BTS-820K	Voltage Divider
R48	10KΩ	½	28170	BTS-10K	Picture Tube Grid
R49	150KΩ	½	149114	BTS-150K	Picture Tube Cathode
R50	10KΩ 20%	½	149107	BTS-10K	Vert. Retrace Blanking
R51	470KΩ 20%	½	149117	BTS-470K	Isolation
R52	10KΩ	½	28170	BTS-10K	Isolation-See Note 12
R53	10KΩ 20%	½	149107	BTS-10K	Horiz. Blanking Plate
R54	150KΩ 20%	½	149114	BTS-150K	Sync. Clipper Plate
R55	33KΩ 20%	½	149110	BTS-33K	Voltage Divider
R56	33KΩ 20%	½	149110	BTS-33K	Noise Reference Plate
R57	18KΩ	½	28173	BTS-18K	Isolation
R58	1Meg 20%	½	149119	BTS-1Meg	Horiz. Blanking Grid
R59	100KΩ 20%	½	149113	BTS-100K	Noise Clipper Diode Load
R60	1Meg 20%	½	149119	BTS-1Meg	Voltage Divider-See Note 6
R61	1800Ω 20%	½	28161	BTS-1800	1st Sound IF Amp. Cathode
R62	1800Ω 20%	½	28161	BTS-1800	1st Sound IF Amp. Decoupling
R63	15KΩ	½	149108	BTS-15K	2nd Sound IF Amp. Grid
R64	150Ω 20%	½	149096	BTS-150	2nd Sound IF Amp. Cathode
R65	33KΩ 20%	½	149110	BTS-33K	Ratio Det. Diode Load
R66	220Ω 20%	½	149097	BTS-220	Balancing
R67	18KΩ	½	28173	BTS-18K	De-Empahsis
R68	470KΩ 20%	½	149117	BTS-470K	Tone Compensation-See Note 3
R69	1Meg 20%	½	149119	BTS-1Meg	Tone Compensation-See Note 3
R70	10Meg 20%	½	149125	BTS-10Meg	AF Amp. Grid
R71	470KΩ 20%	½	149117	BTS-470K	AF Amp. Plate
R72	47KΩ	½	28177	BTS-47K	Phase Inv. Grid-See Note 3
R73	470KΩ 20%	½	149117	BTS-470K	Phase Inv. Plate-See Note 3
R74	220KΩ 20%	½	28183	BTS-220K	Output Grid-See Note 10
R75	270KΩ	½	28184	BTS-270K	Output Grid-See Note 3
R76	330Ω	2	149020	BTB-330	Output Cathode-See Note 11
R77	390Ω	2	149172	BTB-390	Output Cathode-See Note 3
R78	47Ω 20%	½	149093		Parasitic Suppressor-See Note 3
R79	47Ω 20%	½	149093		Parasitic Suppressor-See Note 3
R80	2.2Meg 20%	½	149121	BTS-2.2Meg	Sync. Clipper Grid
R81	2200Ω	½	28162	BTS-2200	Sync. Clipper Cathode
R82	1000Ω	½	28158	BTS-1000	Sync. Clipper Plate
R83	2200Ω	½	28162	BTS-2200	Sync. Clipper Plate
R84A	22KΩ	♦	128200 ♦	Integrator	BTS-22K
B	8200Ω			Integrator	BTS-8200
C	8200Ω			Integrator	BTS-8200
R85	1Meg 20%	½	149119	BTS-1Meg	Vert. Osc. Grid
R86	1.8Meg	½	28194	BTS-1.8Meg	Vert. Osc. Plate
R87	180KΩ	½		BTS-180K	Vert. Osc. Decoupling-See Note 7
R88	4700Ω 20%	½	28166	BTS-4700	Vert. Peaking
R89	2.2Meg 20%	½	149121	BTS-2.2Meg	Vert. Amp. Grid
R90	470Ω 20%	1	149136	BTA-470	Vert. Amp. Cathode
R91	2200Ω 20%	2	149078	BTB-2200	Vert. Amp. Decoupling
R92	2200Ω	2	149048	BTB-2200	Vert. Amp. Decoupling
R93	270KΩ 20%	½	28184	BTS-270K	Bleeder
R94	270KΩ 20%	½	28184	BTS-270K	Bleeder
R95	100KΩ	½	28006	BTS-100K	Horiz. Phase Det. Diode Load
R96	100KΩ	½	28006	BTS-100K	Horiz. Phase Det. Diode Load
R97	33KΩ 20%	½	149110	BTS-33K	Horiz. Phase Det. Diode Load
R98	470KΩ 20%	½	149117	BTS-470K	Horiz. AFC Filter
R99	680KΩ 20%	½	149118	BTS-680K	Voltage Divider
R100	4.7Meg 20%	½	149123	BTS-4.7Meg	Horiz. MV Grid
R101	1500Ω 20%	½	149102	BTS-1500	Horiz. MV Cathode
R102	5600Ω	½	149184	BTA-5600	Horiz. MV Plate
R103	220KΩ 20%	½	149115	BTS-220K	Horiz. MV Grid
R104	82KΩ	½	28180	BTS-82K	Horiz. MV Plate
R105	5600Ω	½	28167	BTS-5600	Horiz. Peaking
R106	68Ω	½	28144		Parasitic Suppressor
R107	470KΩ 20%	½	149117	BTS-470K	Horiz. Output Grid
R108	100Ω 20%	2	149070	BW-2-100	Horiz. Output Cathode
R109	15KΩ	2		BTB-15K	Horiz. Output Screen-See Note 8
R110	6800Ω	1	149143	BTA-6800	Horiz. Output Screen-See Note 2
R111	100Ω 20%	½	149095		Parasitic Suppressor

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Stromberg-Carlson PART No.	IRC PART No.	IDENTIFICATION CODES
R112	10KΩ	1	149402	BTA-10K	Horiz. Feedback
R113	10KΩ	1	149402	BTA-10K	Horiz. Feedback
R114	3.3Ω	1	149314		HV Rectifier Filament-See Note 2
R115	470Ω 20%	2	149074	BTB-470	Filter
R116	3000Ω	20	149377	2D-3000	Filter-Wire Wound
R117	3000Ω	5	149353	1 3/4-3000	Decoupling-Wire Wound-See Notes 9 and 3
R118	2.2Meg 20%	½	149121	BTS-2.2Meg	AM RF Amp. Grid-See Note 3
R119	68Ω	½	28144		AM RF Amp. Cathode-See Note 3
R120	22KΩ	½	149109	BTS-22K	AM Osc. Grid-See Note 3
R121	68Ω	½	28144		AM IF Amp. Cathode-See Note 3
R122	1000Ω 20%	½	149101	BTS-1000	AM IF Amp. Decoupling-See Note 3
R123	2.2Meg 20%	½	149121	BTS-2.2Meg	AVC Network-See Note 3
R124	10KΩ 20%	½	149107	BTS-10K	Diode Filter-See Note 3
R125	100KΩ 20%	½	149113	BTS-100K	Diode Load-See Note 3
R126	1000Ω	½	149101	BTS-1000	AGC Network-See Note 2
R127	68KΩ	½		BTS-68K	Voltage Divider-See Note 2
R128	470KΩ	½		BTS-470K	Isolation

♦ Items R84A, R84B, R84C, C74A, C74B, and C74C are combined into one unit.
Note 2 Not used in all models.
Note 3 Used in model 317RPM only.
Note 4 Some models use 2.2 Microhenries choke in this application
Note 5 Some models use 18KΩ resistor in this application.
Note 6 Some models use 68OKΩ resistor in this application.
Note 7 Some models use 220KΩ resistor in this application.
Note 8 Some models use 6800Ω 1 watt resistor in this application.
Note 9 Some models use parallel resistors in this application to obtain desired value.
Note 10 Model 317TM uses 470KΩ resistor in this application.
Note 11 Model 317TM uses 270Ω 1 watt resistor in this application
Note 12 Some models use parallel resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA Stromberg Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	580VCT	5VAC	6.3VAC			P-3059	
	④2.3A	.290ADC	② 6A	② 1.5A				
				SEC. 4				
				6.3VAC ② 10A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA Stromberg Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	162Ω	910Ω	161254	A-8111 ①	A-3000 ①	TBO-1 ①	Vert. Block Osc. Trans.
T3	500Ω	40Ω	161035		HVO-7		Horiz. Output Trans.
	Tap 23Ω	Taps 4Ω, 12Ω, 36Ω.					
		SEC. 2					
		0Ω					
T4	1.2KΩ		161255	A-8123	A-3037 ①	TBO-4 ①	Vert. Output Trans.
	Tap 12Ω						
T5A	27.5Ω		114706	DY-7	MDF-70		Horiz. Deflection Coils
B	46Ω						Vert. Deflection Coils

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Stromberg Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T6	6.3KCT	3.4Ω	340ΩCT	.4Ω	161262	A-3824	A-2936 ①	RO-110 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA Stromberg Carlson PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	PM	3.4Ω	155197 155121 ③	12J12	12A4A	③ Used in Model 317T.
	CONE DIA.	V. C. DIA.				
SP2	11 3/4	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~c)	REPLACEMENT DATA Stromberg Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.250A	60Ω	2.2 Henries	161930	C-2326 ①	C-2991 ①	TR3300 ①	① Drill one new mounting hole.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Stromberg Carlson PART No.	REPLACEMENT DATA MEISSNER PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L2	Ant. Trans.	.1Ω		171153			
L3	Fil. Choke	.14Ω		171116			
L4	RF Coil Primary	.1Ω		171150			
L5	RF Coil Secondary	.1Ω		171152			
L6	Fil. Choke	0Ω		17116			
L7	Osc. Coil	.1Ω		171151			
L8	RF Choke	.4Ω		171118			
L9	RF Choke	1.8Ω				CLA	2.2 Microhenries
L10	Plate Choke	0Ω		171117			
L11	Conv. Plate Coil	.3Ω		171123			
L12	1st Video IF	.1Ω	.5Ω	114104			
L13	2nd Video IF	1.2 Ω	1.2 Ω	114397			Includes Trap
L14	3rd Video IF	1.2 Ω	1.2Ω	114397			Includes Trap
L15	4th Video IF	.4Ω	.4Ω	114406			Includes Trap
L16	5th Video IF	1.2Ω	1.1Ω	114407			
L17	Peaking	10Ω		114716			
L18	Peaking	7Ω		114715			
L19	Peaking	15Ω		114714			
L20	4.5MC Trap	1.9Ω		114383			
L21	Peaking	13Ω		114713			Wound on 15KΩ Resistor
L22	1st Sound IF	3.5Ω		114400			
L23	2nd Sound IF	3.5Ω		114400			
L24	Ratio Det. Trans.	5Ω	.7Ω	114375			Tap 1.1Ω
L25	Horiz. Osc.	110Ω		114069			
L26	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries
L27	Fil. Choke	3Ω				CLA	3.3 Microhenries Some models use 3.3Ω resistor
L28	Horiz. Size	2.2Ω					
L29	Horiz. Lin.	5.5Ω	Tap 1.5Ω	114106			
L30	Loop Ant.	3.1Ω		139050			Model 317 RPM only.
L31	AM RF Coil	.6Ω	10Ω	114405			Tap 5.5Ω Model 317 RPM only.
L32	AM Osc. Coil	7.5Ω	.6Ω	114096			Model 317 RPM only.
L33	1st AM IF	14Ω	17Ω	114364			Model 317 RPM only.
L34	2nd AM IF	17Ω	14Ω	114364			Model 317 RPM only.
L35	Fil. Choke	0Ω				CL-1	.47 Microhenry

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA Stromberg Carlson PART No. FUSE	Stromberg Carlson PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG	5 Amp.	128007	128008	313005	342001	
M2	Slo Blo 3AG Pigtail	.250Amp.	128000		312.250		

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA Strom. Carlson PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M3		LQD-1J	Q-33J QJ			96-0	0-1 or S-1 and 0-3 or S-3	

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

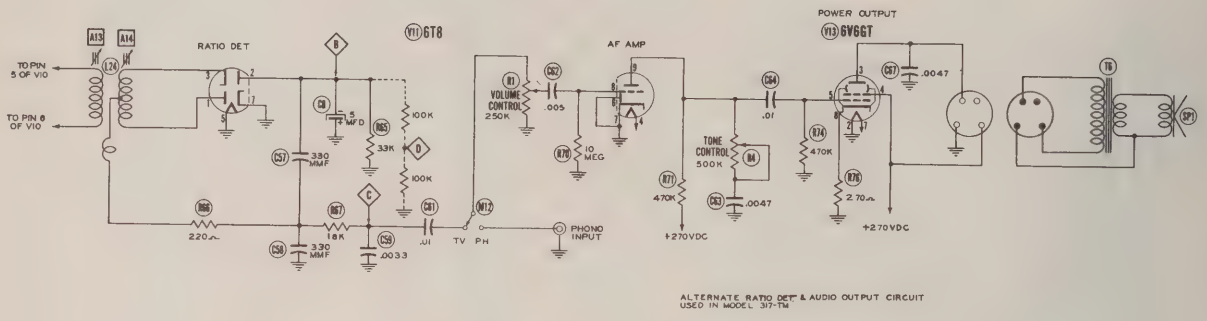
ITEM No.	REPLACEMENT DATA Stromberg Carlson PART No.	WALCO PART No.	REMARKS
M4		W-2S W-2MGS	Standard M.G.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA Stromberg Carlson PART No.		NOTES
M5	Bayonet	6-8	.25	Blue	29956		Type number 44-Used in model 317RPM only.

MISCELLANEOUS

ITEM No.	PART NAME	Stromberg Carlson PART No.	NOTES
M6	RF Tuner		
M7	Crystal	162094	1N65
M8	Switch	145130	Range (Radio, Phono, TV Model 317RPM)
M9	Focus Magnet	114103	
M10	Ion Trap	114645	
M11	Tuning Cap.	110048	17-483MMF, 15-252MMF, 13-152MMF
M12	Switch	158037	Phono-TV (Model 317TM)
B1	Trimmer	110043	Horiz. Osc.
A32	Trimmer	110032	AM Ant.
	Knob	134164	Channel Selector Models 317RPM, 317TM
	Knob	134165	Fine Tuning Models 317RPM, 317TM
	Knob	134166	Vert. Hold, Volume Off/On, Brightness-Models 317RPM, 317TM
	Knob	134167	Horiz. Hold, Contrast Models 317RPM, 317TM
	Knob	134168	Radio-Phono-TV Model 317RPM
	Knob	134169	Radio Tuning Model 317RPM



AUDIO CIRCUIT-MODEL 317TM

DISASSEMBLY INSTRUCTIONS

1. Remove nine push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker.
5. Disconnect phono power plug.
6. Disconnect phono audio input jack.
7. Remove cabinet lamp.
8. Remove four wing nuts from speaker.
9. Remove five metal bolts from chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

PHOTOFACT* Folder

TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2

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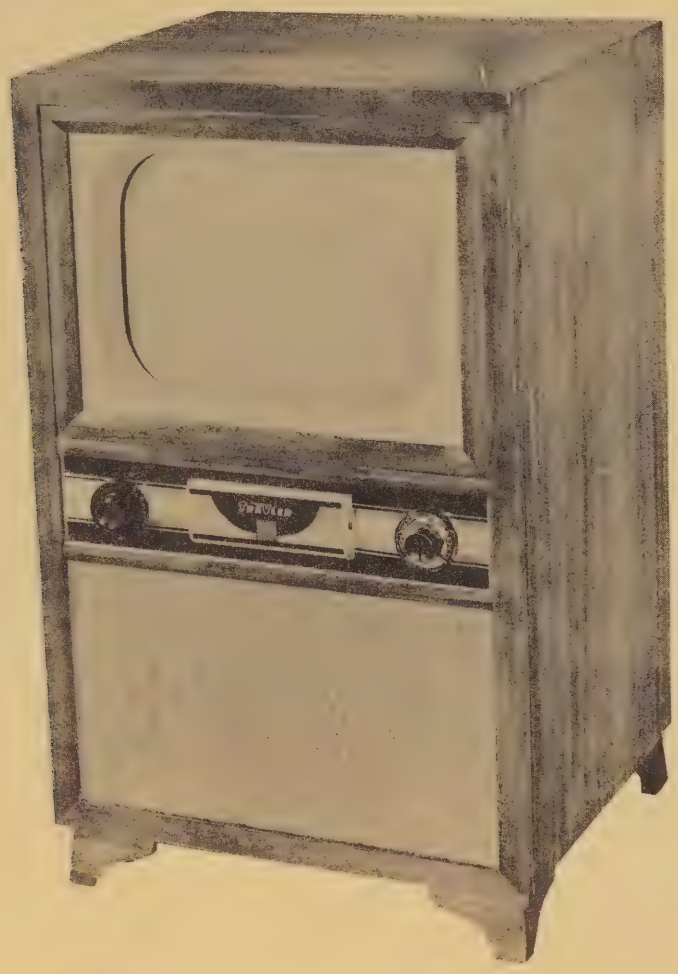

MODEL 64R50

TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2

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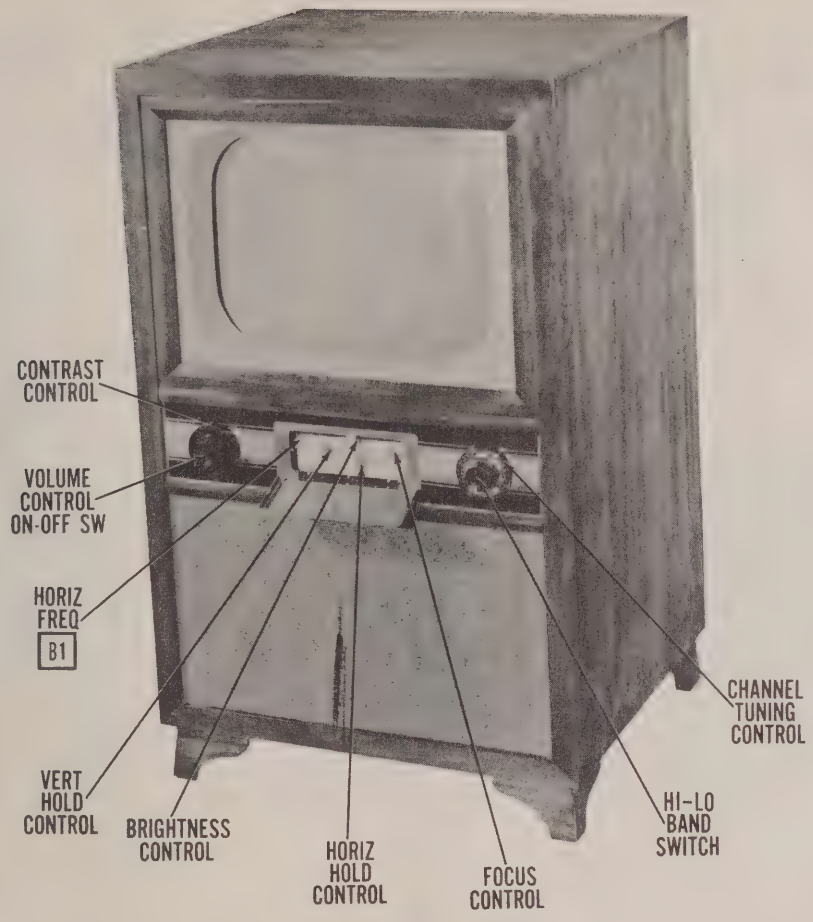
TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2



TRAV-LER MODEL 64R50

TRADE NAME	Trav-Ler Models 20A50, 64R50, -1, -2, 65G50-1, -2, 75A50, -1, -2
MANUFACTURER	Trav-Ler Radio & Tel. Corp., 571 W. Jackson Blvd. Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	1.6 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2

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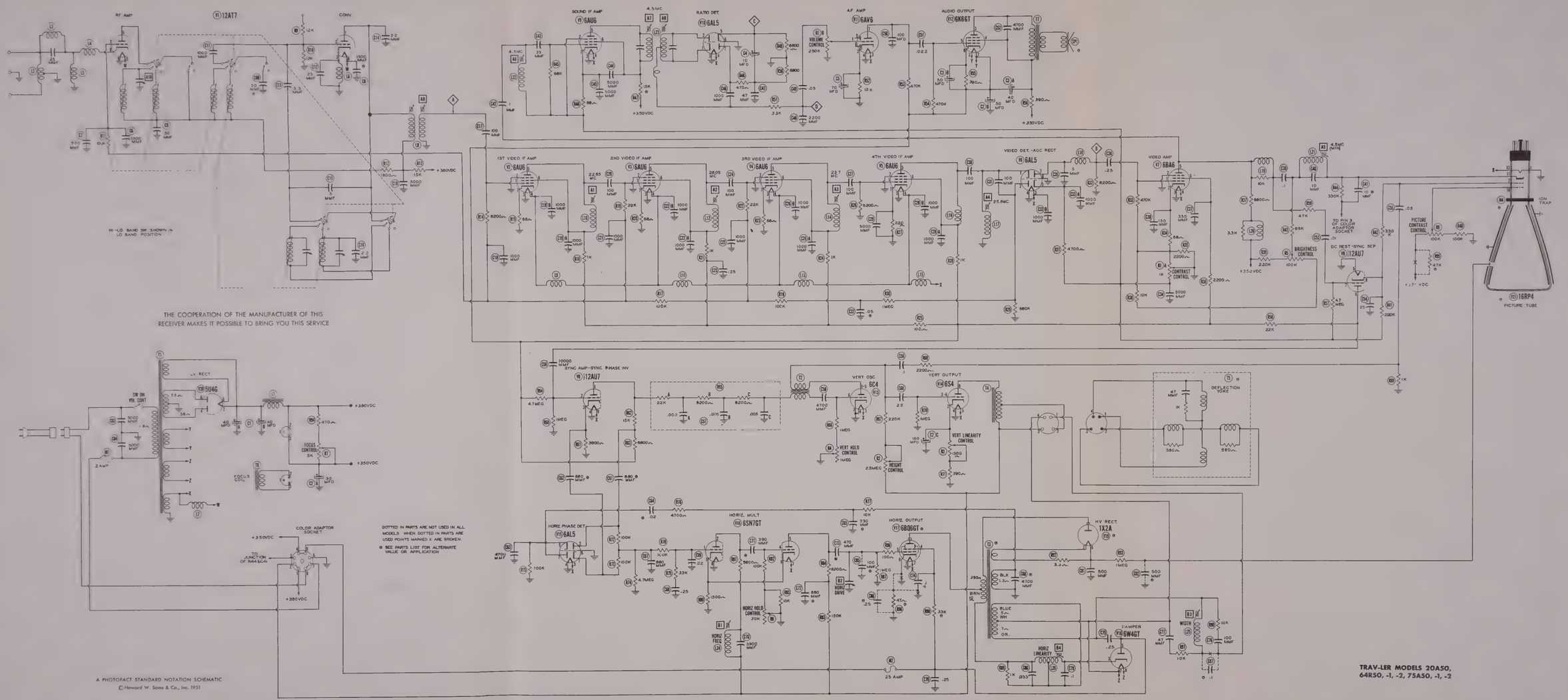
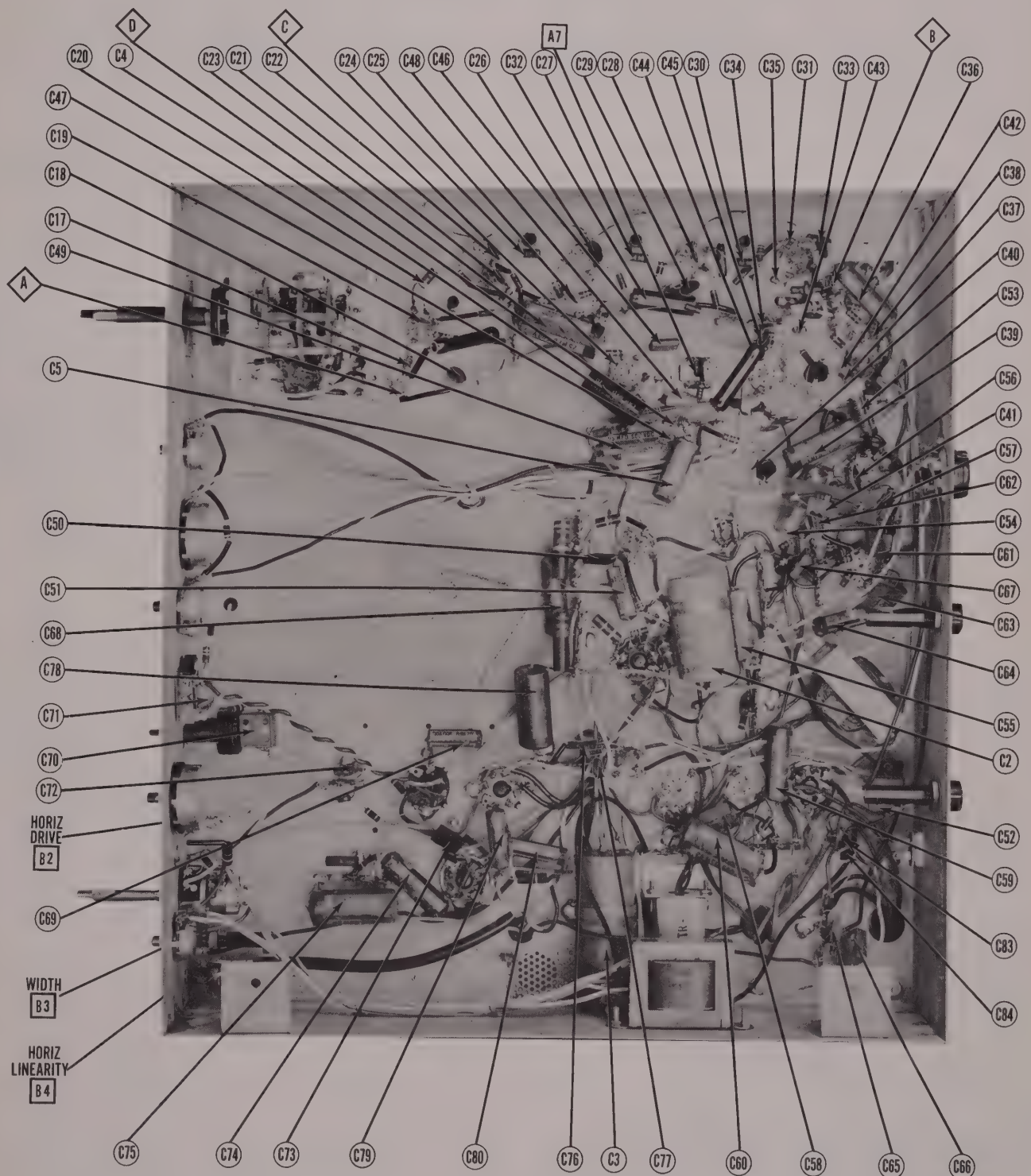
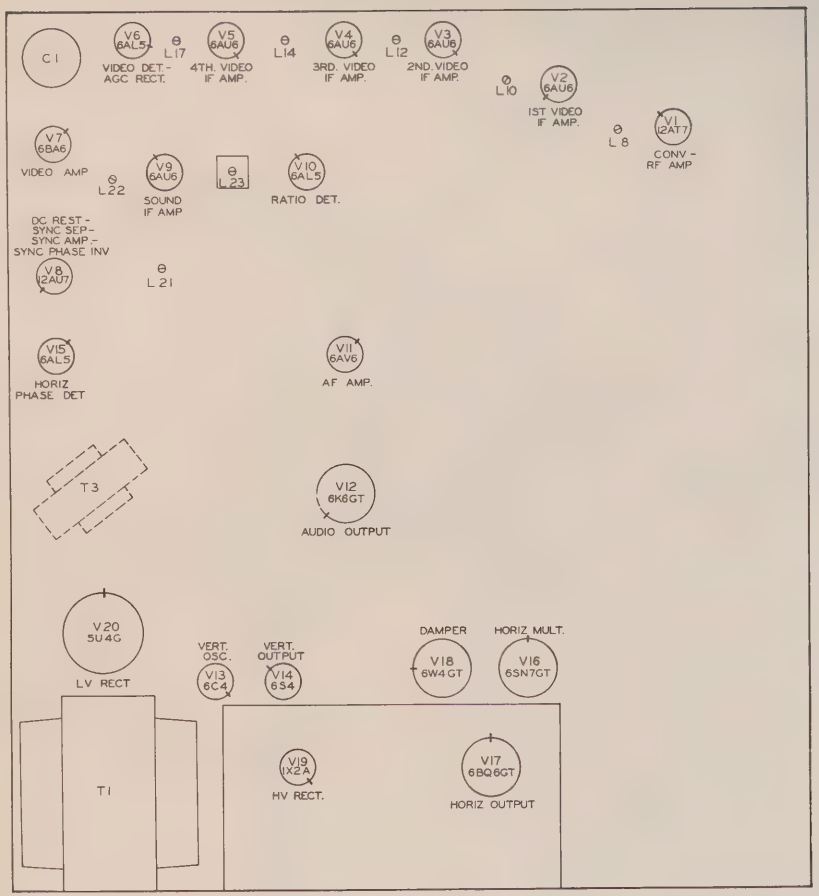


TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2

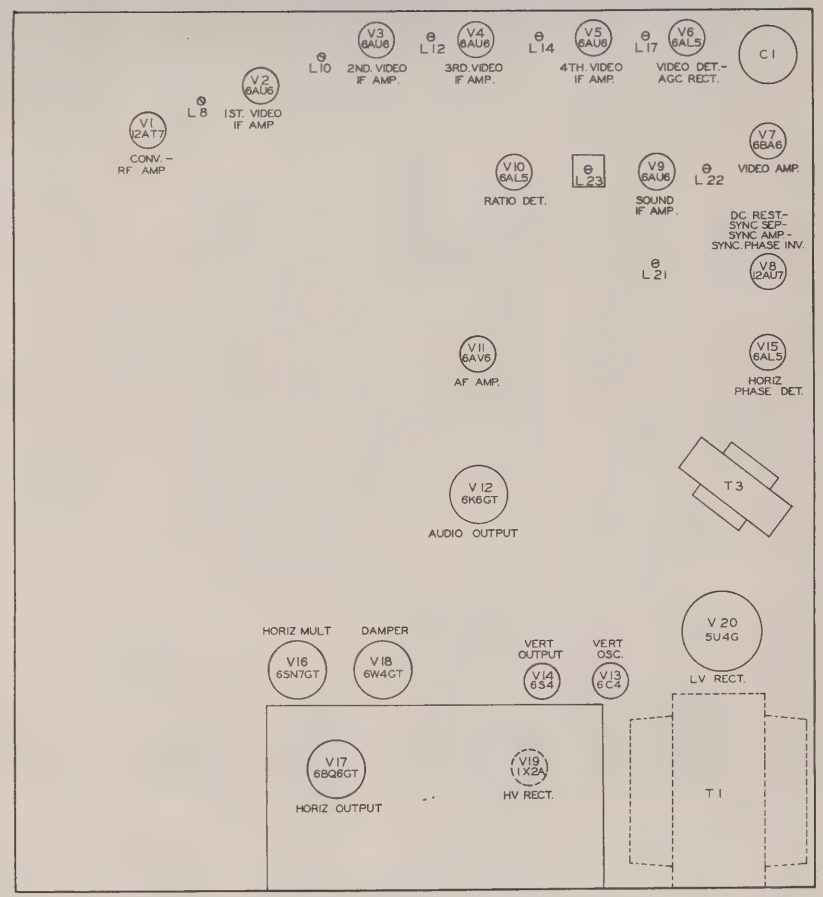
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

TRAV-LER MODELS 20A50, 64R50, -1, -2, 75A50, -1, -2

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the ungrounded lead of C32, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	See fig. 1	High side to Point A. Low side to chassis.	22.85MC (unmod.)	10	DC probe to Point (B). Common to chassis.	A1	Adjust for maximum deflection. Attenuate signal gen. to maintain 2 volt reading.
2.	"	"	26.05MC	"	"	A2	"
3.	"	"	23.7MC	"	"	A3	"
4.	"	"	25.6MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	fig. 1	High side to Point A. Low side to chassis.	24MC (10MC SWP)	21.75MC 26.25MC	10	Vert. Amp. to Point (B). Low side to chassis.		Check for response curve similar to fig. 2. If necessary retouch A1 thru A4 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD.	High side to Point B. Low side to chassis.	4.5MC (400∿ Mod.)	10	DC probe thru detector (fig. 3), to pin 11 of picture tube.	A5	Adjust for MINIMUM 400∿ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD.	High side to Point A. Low side to chassis.	4.5MC (unmod.)	Any channel not used locally.	DC probe to Point (C). Common to chassis.	A6, A7	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to Point (D). Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD.	High side to Point A. Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any channel not used locally	Vert. Amp. to Point (C). Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per fig. 4.
8.	"	"	"	"	"	Vert. Amp. to Point (D). Low side to chassis.	A8	Reconnect capacitor C4. Adjust A8 so 4.5MC occurs at center of crossover lines as per fig. 5. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

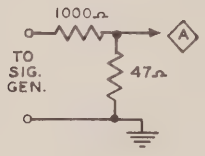


FIG.1

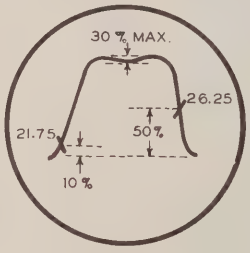


FIG. 2

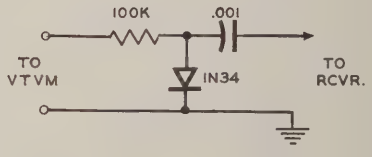


FIG. 3

FIG. 4

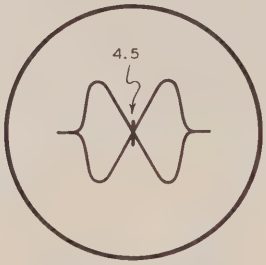


FIG. 5

ALIGNMENT INSTRUCTIONS (CONT.)

TUNER ALIGNMENT

Alignment of the tuner should be limited to the secondary slug of L8 (A9), and possibly the trimmer capacitor A10. The remaining adjustments require the use of special test set-up used by the factory and should not be attempted as a field alignment. If further alignment is deemed necessary, the tuner should be returned to the manufacturer for replacement.
Connect the 3 volt bias as during video IF alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

LOW BAND ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	SWEEP GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	83.25MC 87.75MC	6	Vert. Amp. to Point (B). Low side to chassis.	A9	Adjust for symmetrical peaks as per fig. 6.
10.	"	"	79MC (10MC SWP)	77.25MC 81.75MC	5	"		Check all low band channels for response similar to fig. 6. If necessary make compromise adjustment of A9 for optimum response across the low band channels.
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 54.75MC	2			

HIGH BAND ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	SWEEP GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 21.575MC	13	Vert. Amp. to Point (B). Low side to chassis.	A10	Check the response for symmetrical peaks as per fig. 6. If necessary adjust A10 for best compromise over the high band channels.
			207MC (10MC SWP)	205.25MC 209.75MC	12			
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			

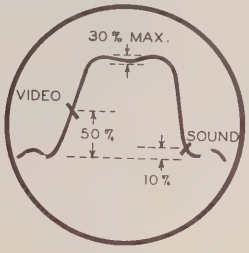
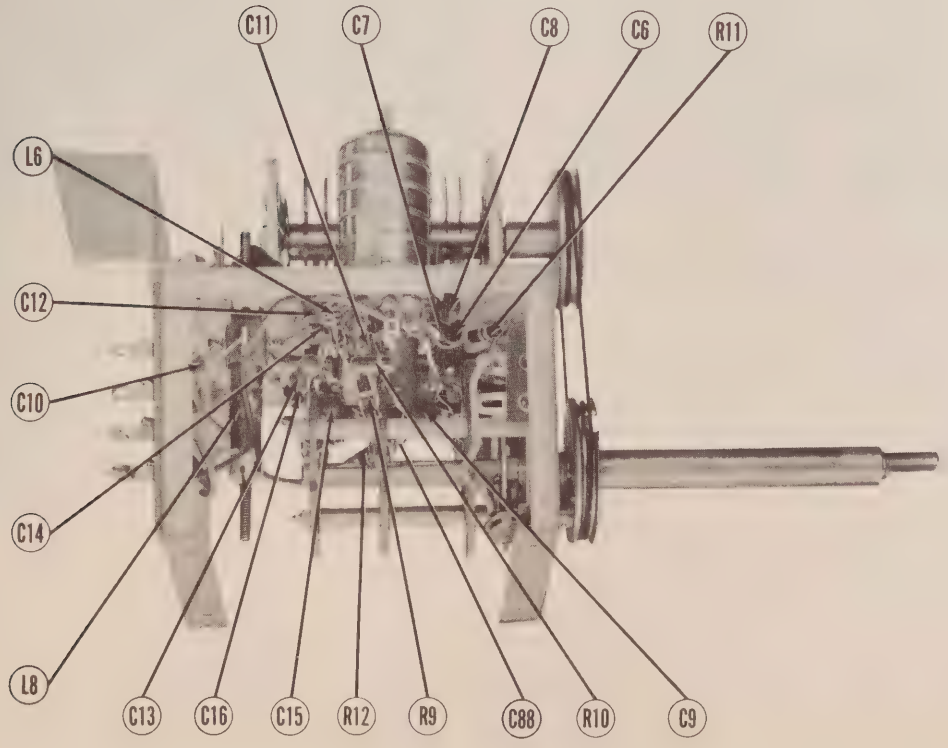


FIG. 6



RF TUNER

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	■150VDC	§-2.6VDC	0V	6.3VAC	6.3VAC	■140VDC	-.5VDC	0V	0V
V 2	6AU6	-.4VDC	0V	0V	6.3VAC	105VDC	105VDC	.4VDC		
V 3	6AU6	-.4VDC	0V	0V	6.3VAC	105VDC	105VDC	.4VDC		
V 4	6AU6	-.4VDC	0V	0V	6.3VAC	105VDC	105VDC	.4VDC		
V 5	6AU6	0V	0V	0V	6.3VAC	105VDC	105VDC	1.6VDC		
V 6	6AL5	0V	-1.8VDC	6.3VAC	0V	0V	0V	-.4VDC		
V 7	6BA6	1.6VDC	0V	0V	6.3VAC	275VDC	115VDC	13VDC		
V 8	12AU7	55VDC	5.4VDC	12VDC	0V	0V	125VDC	0V	10.2VDC	6.3VAC
V 9	6AU6	-.7VDC	0V	0V	6.3VAC	145VDC	145VDC	.9VDC		
V 10	6AL5	0V	0V	0V	6.3VAC	.4VDC	0V	-.5VDC		
V 11	6AV6	0V	1.1VDC	6.3VAC	0V	-3.6VDC	-3.6VDC	75VDC		
V 12	6K6GT	0V	▲6.3VAC	▲185VDC	▲205VDC	▲0V	▲0V	▲0V	▲12VDC	
V 13	6C4	105VDC 300VDC	0V	6.3VAC	0V	105VDC 300VDC	§-25VDC §-38VDC	0V		
V 14	6S4	0V	11VDC 18VDC	§.1VDC	0V	6.3VAC	§.1VDC	0V	0V	370VDC
V 15	6AL5	5.8VDC	-4.4VDC	6.3VAC	0V	0V	0V	0V		
V 16	6SN7GT	§ 1.5VDC	335VDC	15VDC	§-19VDC	155VDC	15VDC	6.3VAC	0V	
V 17	6BQ6GT	-25VDC	6.3VAC	0V	135VDC	-25VDC	0V	0V	0V	Top Cap *
V 18	6W4GT	0V	0V	640VDC	0V	350VDC	0V	640VDC	640VDC	
V 19	1X2A	* DO NOT MEASURE PINS 1-9								Top Cap *
V 20	5U4G	0V	400VDC	0V	350VAC	0V	350VAC	0V	400VDC	
V21	16RP4	0V	3.7VDC	PIN 10 175VDC 350VDC	PIN 11 19VDC 115VDC	PIN 12 6.3VAC	H. V. CONNECTOR ** 9K.V.			

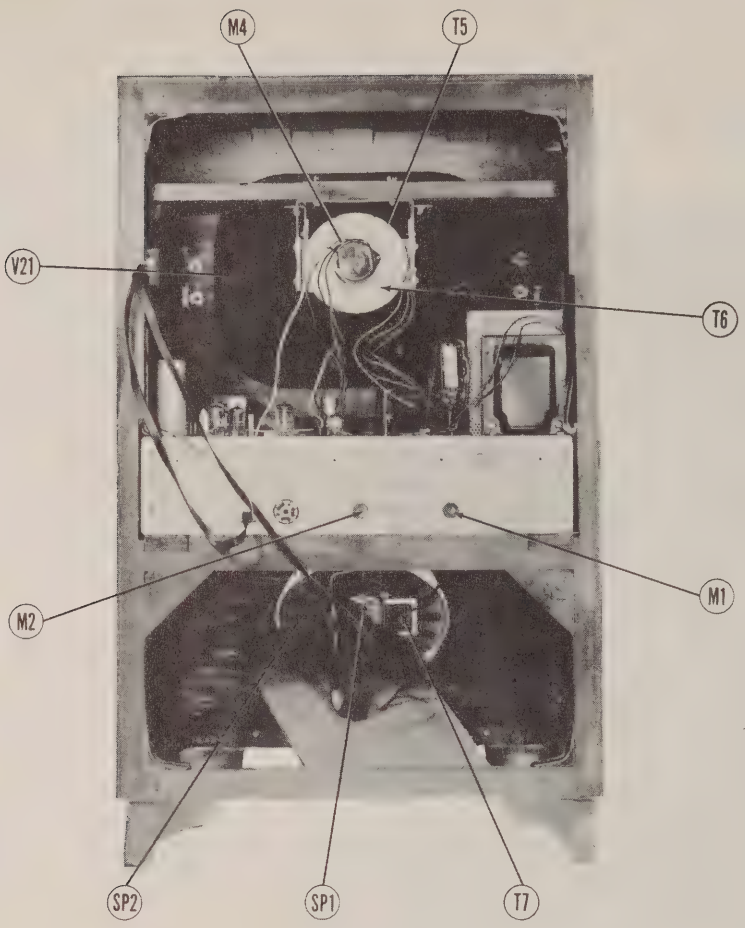
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER-CLOCKWISE
▲ MEASURED FROM JUNCTION OF R55, C3
* DO NOT MEASURE
** USE EXTREME CATUION WHEN MEASURING THIS VOLTAGE
§ TAKEN WITH VACUUM TUBE VOLTMETER
■ VOLTAGE MAY BE ERRATIC.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	†15KΩ	12KΩ	0Ω	.1Ω	.1Ω	†17KΩ	2Meg	0Ω	0Ω
V 2	6AU6	1.8Meg	0Ω	0Ω	.1Ω	▲1KΩ	▲1KΩ	68Ω		
V 3	6AU6	1.9Meg	0Ω	0Ω	.1Ω	▲1KΩ	▲1KΩ	68Ω		
V 4	6AU6	1.9Meg	0Ω	0Ω	.1Ω	▲1KΩ	▲1KΩ	68Ω		
V 5	6AU6	8.2KΩ	0Ω	0Ω	.1Ω	▲1KΩ	▲1KΩ	220Ω		
V 6	6AL5	.5Ω	680KΩ	.1Ω	0Ω	4.7KΩ	0Ω	8.2KΩ		
V 7	6BA6	470KΩ	0Ω	0Ω	.1Ω	†7.1KΩ	▲2.2KΩ	800Ω		
V 8	12AU7	▲22KΩ	1Meg	3.9KΩ	0Ω	0Ω	▲22KΩ	4.7Meg	220KΩ	.1Ω
V 9	6AU6	68KΩ	0Ω	0Ω	.1Ω	†15KΩ	†15KΩ	68Ω		
V 10	6AL5	Inf.	Inf.	0Ω	.1Ω	6.8KΩ	0Ω	7.2KΩ		
V 11	6AV6	0Ω	12KΩ	.1Ω	0Ω	Inf.	Inf.	▲470Ω		
V 12	6K6GT	Inf.	▲.4Ω	†1.3KΩ	†690Ω	▲470KΩ	▲0Ω	▲0Ω	▲390Ω	
V 13	6C4	†2.7Meg †220KΩ	Inf.	.1Ω	0Ω	†2.7Meg †220KΩ	2Meg 1Meg	0Ω		
V 14	6S4	Inf.	1.9KΩ 390Ω	1Meg	0Ω	.1Ω	1Meg	Inf.	Inf.	†1KΩ
V 15	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	100KΩ	0Ω	100KΩ		
V 16	6SN7GT	4.8Meg	†5.9KΩ	1.5KΩ	140KΩ	†158KΩ	1.5KΩ	.1Ω	0Ω	
V 17	6BQ6GT	1Meg	.1Ω	Inf.	†33KΩ	1Meg	Inf.	0Ω	0Ω	Top Cap #14Ω
V 18	6W4GT	Inf.	Inf.	Inf.	Inf.	†300Ω	Inf.	#6.5Ω	#6.6Ω	
V 19	1X2A	PINS 1-9 HAVE INF. RESISTANCE								Top Cap #300Ω
V 20	5U4G	Inf.	75KΩ	Inf.	58Ω	Inf.	55Ω	Inf.	75KΩ	
V 21	16RP4	0Ω	520KΩ	PIN 10 †50KΩ †300Ω	PIN 11 †200KΩ †120KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER-CLOCKWISE
† MEASURED FROM PIN 2 OF V20
# MEASURED FROM PIN 3 OF V18
▲ MEASURED FROM JUNCTION R55, C3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug, (B1), to the center of the range over which the picture synchronizes horizontally.
Adjust the horizontal drive trimmer, (B2), counter clockwise as far as possible without crowding appearing in the center portion of the picture.
Adjust the width slug, (B3), until the picture is slightly wider than necessary to fill the mask horizontally.
Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right.
Since both width and horizontal linearity are effected by the horizontal drive trimmer, it may be necessary to adjust them alternately for optimum results.

DISASSEMBLY INSTRUCTIONS

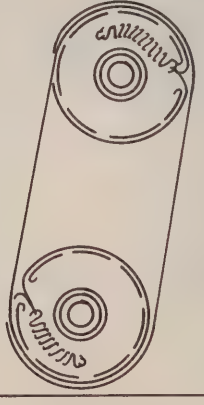
1. Remove five push-on type control knobs.
2. Remove five wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Disconnect yoke leads.
7. Disconnect focalizer leads.
8. Disconnect high voltage lead.
9. Disconnect picture tube socket.
10. Remove four 7/16" hex head bolts from chassis. Remove chassis.
11. Remove four 1/4" hex head bolts from speaker. Remove speaker.

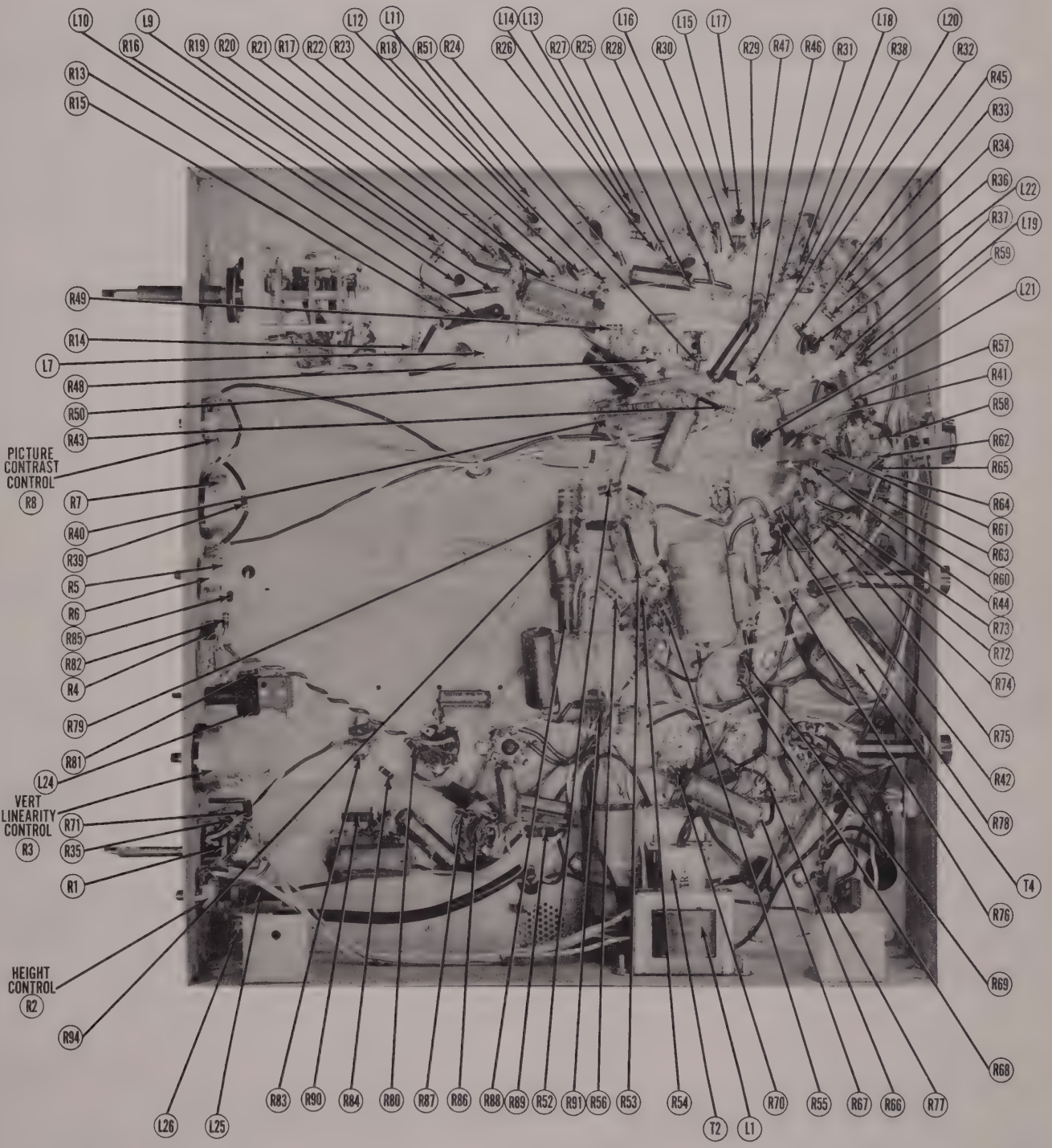
PICTURE TUBE REMOVAL

1. Remove antenna leads and rear cover.
2. Remove high voltage lead, tube socket, and ion trap.
3. Disengage locks at side of safety glass frame. Remove frame assembly.
4. Remove retaining clips holding the picture tube in position and remove tube through front of cabinet.

FINE TUNING DRIVE CORD STRINGING

BOTH PULLEYS SHOWN IN MAX. COUNTERCLOCKWISE POSITION.





CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	12AT7	12AT7	9A	
V2	1st. Video IF Amp.	6AU6	6AU6	7BK	
V3	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V4	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V5	4th Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Detector-AGC Rectifier	6AL5	6AL5	6BT	
V7	Video Amplifier	6BA6	6BA6	7BK	
V8	DC Restorer-Sync. Separator-Sync. Amplifier-Sync. Phase Inverter	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	7BT	
V12	Audio Output	6K6GT	6K6GT	7S	
V13	Vert. Oscillator	6C4	6C4	6BG	
V14	Vert. Output	6S4	6S4	9AC	
V15	Horiz. Phase Det.	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17A	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
B	Horiz. Output	6CD6G	6CD6G	5BT	
V18	Damper	6W4GT	6W4GT	4CG	
V19A	HV Rectifier	1X2A	1X2A	7CB	
B	HV Rectifier	1X2	1X2	7CB	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: TRAV-LER PART No.	SYLVANIA PART No.	THOMAS PART No.	RTMA BASE TYPE	NOTES
V21A	16RP4	16RP4	16KP4	12D	
B	16GP4	16GP4		12D	
C	17BP4A	17BP4		12D	
D	20DP4	20DP4		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	TV-EC-16	AFH88J		UPT4445		TVL-2764	▲ Filter
B	40	450							▲ Filter
C2A	30	450	TV-EC-23	PRS450/40-40		EDL5315		TVL-3708	Filter
				PRS25/100		C10			Filter
B	50	150							Vert. Output Cathode
C	100	25							
C3A	40	450	TV-EC-17	PRS450/40		BR4045A		TVA-1712	Audio Output Decoupling
B	50	50		PRS50/50		BR505		TVA-1308	Audio Output Cathode
C4	10	50	TV-EC-20	PRS50/10		BR105		TVA-1304	Stabilizing Cap.
C5	70	10	TV-EC-6	PRS25-100		BRH121		TVA-1130	AF Amp. Cathode
C6	1500			BPD-0015	DD-152		801-0015	5HK-D15	AGC Filter
C7	1500			BPD-0015	DD-152		801-0015	5HK-D15	AGC Filter
C8	1500			BPD-0015	DD-152		801-0015	5HK-D15	Conv. Fil. *
C9	50			SI50	D6-500		GP1K-500	5GA-Q5	RF Amp. Decoupling
C10	5000		TV-CC-3	BPD-005	DD-502		811-005	5HK-D5	RF Bypass
C11	1000			SI100G	D6-102		GP2L-102	5HK-D1	RF Coupling
C12	25			SI25NP0			NP0K-250	5TCC-Q25	Osc. Cathode
C13	3.35			SI3.3NP0	TCZ-3.3		NP0K-3R5		Osc. Grid Cap.
C14	2.2				TCZ-2.2		NP0K-2R2		Fixed Trimmer
C15	3						N750K-030		Fixed Trimmer
C16	2.2				TCZ-2.2		NP0K-2R2		Fixed Trimmer
C17	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C18	1000		TV-CC-2	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C19A	1000		TV-CC-1	BPD-2X001	DD-2-102	(1W5D1	812-001	5HK-2D1	1st. Video IF Dec.
B	1000					(1W5D1			1st. Video IF Fil.
C20	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C21	1000		TV-CC-2	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C22A	1000		TV-CC-1	BPD-2X001	DD-2-102	(1W5D1	812-001	5HK-2D1	2nd. Video IF Dec. .
B	1000					(1W5D1			2nd. Video IF Fil.
C23	.25	600	TV-PC-17	684-25		GP6P25		5TM-P25	RF Bypass
C24	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C25	1000		TV-CC-2	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C26A	1000		TV-CC-1	BPD-2X001	DD-2-102	(1W5D1	812-001	5HK-2D1	3rd. Video IF Dec.
B	1000					(1W5D1			3rd. Video IF Fil.
C27	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C28A	1000		TV-CC-1	BPD-2X001	DD-2-102	(1W5D1	812-001	5HK-2D1	4th. Video IF Dec.
B	1000					(1W5D1			4th. Video IF Fil.
C29	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	4th. Video IF Cathode
C30	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C31	100		TV-CC-5	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C32	.05	600		P688-05	DF-503	PTE6S5		6TM-S5	AGC Filter †
C33A	1000		TV-CC-1	BPD-2X001	DD-2-102	(1W5D1	812-001	5HK-2D1	AGC Filter
B	1000					(1W5D1			Video Det. Fil.
C34	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AGC Decoupling
C35	4.7		TV-CC-15	SI4.7NP0	TCZ-4.7		NP0K-4R7		Video Det. Filter
C36	.25	200	TV-PC-4	P488-25		GT2P25		2TM-P25	Video Coupling
C37	330	500	TV-MC-13	1468-00035	D6-331		GP2K-331	1FM-335	Video Amp. Screen
C38	150		TV-CC-23	SI150	D6-151	5W5T15	GP3K-151	5GA-T15	Video Amp. Cathode
C39	.1	600	TV-PC-16	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C40	10	500	TV-CC-21	1469-00001	TCZ-10	5R5Q1	NP0K-100	MS-41	Fixed Trimmer
C41	10	500	TV-CC-21	1469-00001	TCZ-10	5R5Q1	NP0K-100	MS-41	Picture Tube Cathode *
C42	1		TV-CC-14		TCZ -1		NP0K-010		Sound IF Coupling
C43	33		TV-CC-6	SI33	D6-330	5R5Q4	GP1K-330	5GA-Q33	Sound IF Coupling
C44	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Sound IF Decoupling
C45	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Sound IF Cathode
C46	1000	500	TV-MC-16	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Diode Load Cap.
C47	47		TV-CC-12	SI47	D6-470	5W5Q5	GP1K-470	5GA-Q47	RF Bypass
C48	2200	500	TV-MC-11	1467-0025	D6-222	1W5D25	GP2-333-222		De-emphasis
C49	.05	600		P688-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C50	100	500	TV-MC-2	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	AF Amp. Plate

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C51	.02	600	TV-PC-14	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C52	4700	500	TV-MC-10	1464-005	D6-472	1DR5D5	GP2-333-472	MS-25	Audio Output Plate
C53	.01	600	TV-PC-15	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Sync. Coupling
C54	.25	200	TV-PC-4	P488-25		GT2P25		2TM-P25	Sync. Sep. Cathode
C55	.05	400	TV-PC-5	P488-05	DF-503	PTE4S5		4TM-S5	Vert. Sweep Coupling
C56	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sync. Coupling
C57A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		♦TV-CC-26	P688-005	♦PC-100	PTE6D5	GP2-333-502	♦101C1	Vert. Integrator Net.
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C58	4700	500	TV-MC-10	1464-005	D6-472	1DR5D5	GP2-333-472	MS-25	Vert. Sync. Coupling
C59	.1	600	TV-PC-16	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Discharge
C60	.25	600	TV-PC-17	684-25		GP6P25		6TM-P25	Vert. Sweep Coupling
C61	680	500	TV-MC-15	1469-0007	D6-681	2R5T7	GP2K-681	MS-37	Horiz. Sync. Coupling *
C62	680	500	TV-MC-15	1469-0007	D6-681	2R5T7	GP2K-681	MS-37	Horiz. Sync. Coupling †
C63	4700	500	TV-MC-10	1464-005	D6-472	1DR5D5	GP2-333-472	MS-25	AFC Filter
C64	.02	600	TV-PC-14	P688-02	DF-203	PTE6S2		6TM-S2	Horiz. Feedback ††
C65	330	500	TV-MC-13	1469-00035	D6-331		GP2K-331		Integrator Net. ††
C66	4700	500	TV-MC-10	1464-005	D6-472	1DR5D5	GP2-333-472	MS-25	Integrator Net *
C67	680	500	TV-MC-15	1469-0007	D6-681	2R5T7	GP2K-681	MS-37	AFC Filter
C68	.25	200	TV-PC-4	P488-25		GT2P25		2TM-P25	AFC Filter
C69	.02	600	TV-CC-15	P688-02	DF-203	PTE6S2		6TM-S2	Horiz. MV Grid
C70	3900	500	TV-MC-12	1464-004		1DR5D4			Fixed Trimmer
C71	390	500	TV-MC-14	1469-0004		5R5T4		MS-34	Horiz. MV Feedback ††
C72	680	500	TV-MC-15	1479-0007		2R5T7		MS-37	Horiz. Discharge **
C73	470	500	TV-MC-17	1469-0005		5R5T5		MS-35	Horiz. Sweep Coupling ¶
C74	.01	600	TV-PC-15	P688-01	DF-104	PTE6S1	GP2-333-103	6TM-S1	Horiz. Output Screen ¶¶
C75	.25	600	TV-PC-17	684-25		GP6P25		6TM-P25	Horiz. Sweep Coupling
C76	100	1000							Fixed Trimmer
C77	47	1500	TV-CC-27						Fixed Trimmer
C78	.25	600	TV-PC-17	684-25		GP6P25		6TM-P25	Damper Plate
C79	.1	200	TV-PC-3	P288-1		PTE4P1		2TM-P1	Damper Filter
C80	.03	600	TV-PC-18	P688-03		PTE6S3		6TM-S3	Damper Filter
C81	500	15000	TV-CC-22	HV20C	TV3-502				HV Filter *
C82	500	15000	TV-CC-22	HV20C	TV3-502				HV Filter *
C83	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Line Filter
C84	5000		TV-CC-3	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Line Filter
C85	100		TV-MC-2	1468-0001		5W5T1		1FM-31	Horiz. Output Grid *
C86	.25	200	TV-PC-4	P488-25		GT2P25		2TM-P25	Horiz. Output Cathode *
C87	.1	600	TV-PC-16	P688-1		PTE6P1		6TM-P1	Horiz. Sweep Coupling *
C88	50			SI50	D6-500		GP1K-500	5GA-Q5	Fixed Trimmer *

* Not used in all models.
† Some models use .02MFD. in this application. (Mfgrs. Part # TV-PC-14)
‡ Some models use 2200MMF. in this application. (Mfgrs. Part # TV-MC-11)
†† Some models use .01MFD. in this application. (Mfgrs. Part # TV-PC-15)
‡‡ Some models use 330MMF. in this application. (Mfgrs. Part # TV-MC-13)
•• Some models use 390MMF. in this application. (Mfgrs. Part # TV-MC-14)
¶ Some models use 680MMF. in this application. (Mfgrs. Part # TV-MC-15)
¶¶ Some models use .25MFD. in this application. (Mfgrs. Part # TV-PC-4)
# Some models use .1MFD. in this application. (Mfgrs. Part # TV-PC-16)
Some models use 220MMF. in this application. (Mfgrs. Part # TV-MC-3)
♦ Items C57A, C57B, C57C, R65A, R65B, R65C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESIST-ANCE	RATING: WATTS	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1000Ω	2	TV-VC36		RTV-292		Contrast Control - Wire Wound
B	250KΩ	½					Volume Control and SW-Rear
R2A	2.5Meg	½	TV-VC28	Q11-239	AG-84-S	AN-83	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R2A per instructions
R3	150Ω	2	TV-VC35	WK-1500	43-1500	VK-130	Vert. Linearity Control - Wire Wound
R4A	1Meg	½	TV-VC30	Q11-137	AM-61-S	AN-69	Vert. Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	100KΩ	½	TV-VC32	Q11-128	AG-49-S	AN-40	Brightness Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6A	50KΩ	½	TV-VC31	Q11-123	AG-44-S	AN-31	Horiz. Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7	5000Ω	2	TV-VC29	W-5000	43-5000	VK-135	Focus Control - Wire Wound
R8A	100KΩ	½	TV-VC32	Q11-128	AG-49-S	AN-40	Picture Contrast Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R8A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	12KΩ	½		BTS-12K	Series Test Point
R10	12KΩ	½			Osc. Grid
R11	100KΩ 20%	½			Mixer Grid
R12	1800Ω 20%	½		BTA-1800	Mixer Plate
R13	15KΩ	5	TV-WR-12	1 3/4A-15K	Decoupling-Wire Wound
R14	8200Ω	½	TV-IR-60		1st Video IF Amp. Grid
R15	68Ω	½	TV-IR-59		1st Video IF Amp. Cathode
R16	1000Ω 20%	½	TV-IR-24	BTS-1000	1st Video IF Amp. Decoupling
R17	100KΩ	½	TV-IR-43	BTS-100K	AGC Network
R18	100KΩ	½	TV-IR-43	BTS-100K	AGC Network
R19	22KΩ	½	TV-IR-45		2nd Video IF Amp. Grid
R20	68Ω	½	TV-IR-59		2nd Video IF Amp. Cathode
R21	1000Ω 20%	½	TV-IR-24	BTS-1000	2nd Video IF Amp. Decoupling
R22	22KΩ	½	TV-IR-45		3rd Video IF Amp. Grid
R23	68Ω	½	TV-IR-59		3rd Video IF Amp. Cathode
R24	1000Ω 20%	½	TV-IR-24	BTS-1000	3rd Video IF Amp. Decoupling
R25	100Ω 20%	½	TV-IR-36	BTS-100	Decoupling
R26	8200Ω	½	TV-IR-60		4th Video IF Amp. Grid
R27	220Ω	½	TV-IR-5	BTS-220	4th Video IF Amp. Cathode
R28	1000Ω 20%	½	TV-IR-24	BTS-1000	4th Video IF Amp. Decoupling
R29	680KΩ	½	TV-IR-26	BTS-680K	AGC Network
R30	1Meg 20%	½	TV-IR-12	BTS-1Meg	AGC Network
R31	4700Ω	½	TV-IR-48	BTS-4700	AGC Network
R32	8200Ω	½	TV-IR-60	BTS-8200	Video Det. Diode Load
R33	470KΩ 20%	½	TV-IR-11	BTS-470K	Video Amp. Grid
R34	68Ω	½	TV-IR-59		Video Amp. Cathode
R35	2200Ω	½	TV-IR-67	BTS-2200	Video Amp. Cathode
R36	2200Ω	½	TV-IR-67	BTS-2200	Video Amp. Screen
R37	6800Ω	5	TV-WR-8	1 3/4A-7000	Video Amp. Plate-Wire Wound

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R38	10KΩ	1	TV-IR-84	BTA-10K	Voltage Divider
R39	220KΩ	1	TV-IR-91	BTS-220K	Voltage Divider
R40	100KΩ	½	TV-IR-43	BTS-100K	Voltage Divider
R41	220KΩ	½	TV-IR-91	BTS-220K	DC Restorer Diode Load
R42	330KΩ	½	TV-IR-51	BTS-330K	Picture Tube Grid
R43	68KΩ	½	TV-IR-61	BTS-68K	Picture Tube Cathode
R44	330KΩ	½	TV-IR-51	BTS-330K	Picture Tube Cathode
R45	68KΩ	½	TV-IR-61	BTS-68K	Sound IF Amp. Grid
R46	68Ω 5%	½	TV-IR-59		Sound IF Amp. Cathode
R47	15KΩ	5	TV-WR-12	1 3/4A-15K	Sound IF Amp. Decoupling-See Note 3
R48	470Ω	½	TV-IR-6	BTS-470	Balancing
R49	6800Ω	½	TV-IR-78	BTS-6800	Ratio Det. Diode Load
R50	6800Ω	½	TV-IR-78	BTS-6800	Ratio Det. Diode Load
R51	33KΩ	½	TV-IR-58	BTS-33K	De-emphasis
R52	12KΩ	1	TV-IR-88	BTA-12K	AF Amp. Cathode
R53	470KΩ 20%	½	TV-IR-11	BTS-470K	AF Amp. Plate
R54	470KΩ 20%	½	TV-IR-11	BTS-470K	Output Grid
R55	390Ω	1	TV-IR-55	BTA-390	Output Cathode
R56	390Ω	1	TV-IR-55	BTA-390	Output Cathode
R57	4.7Meg 20%	½	TV-IR-44	BTS-4.7Meg	Sync. Sep. Grid
R58	22KΩ	½	TV-IR-45	BTS-22K	Sync. Sep. Plate
R59	47KΩ	½	TV-IR-10	BTS-47K	Isolation
R60	1Meg 20%	½	TV-IR-11	BTS-1Meg	Sync. Amp.-Phase Inv. Grid
R61	3900Ω	½	TV-IR-22	BTS-3900	Sync. Amp.-Phase Inv. Cathode
R62	15KΩ	½	TV-IR-63	BTS-15K	Sync. Amp.-Phase Inv. Plate
R63	6800Ω	½	TV-IR-78	BTS-6800	Sync. Amp.-Phase Inv. Plate
R64	4.7Meg 20%	½	TV-IR-44	BTS-4.7Meg	Voltage Divider
R65A	22KΩ		TV-CC-26 ♦	BTS-22K	Integrator
B	8200Ω			BTS-8200	Integrator
C	8200Ω			BTS-8200	Integrator
R66	1Meg 20%	½	TV-IR-11	BTS-1Meg	Vert. Osc. Grid
R67	220KΩ	½	TV-IR-91	BTS-220K	Vert. Osc. Plate
R68	2200Ω	½	TV-IR-67	BTS-2200	Vert. Peaking and Retrace Blanking
R69	1000Ω	½	TV-IR-24	BTS-1000	Vert. Peaking and Retrace Blanking
R70	1Meg 20%	½	TV-IR-11	BTS-1Meg	Vert. Output Grid
R71	390Ω	1	TV-IR-55	BTA-390	Vert. Output Cathode
R72	100KΩ	½	TV-IR-43	BTS-100K	Horiz. Phase Det. Diode Load
R73	100KΩ	½	TV-IR-43	BTS-100K	Horiz. Phase Det. Diode Load
R74	4.7Meg 20%	½	TV-IR-44	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R75	100KΩ	½	TV-IR-43	BTS-100K	Horiz. Phase Det. Diode Load
R76	4700Ω 5%	½	TV-IR-48	BTS-4700-5%	Horiz. Feedback Network
R77	10KΩ	½	TV-IR-64	BTS-10K	Horiz. Feedback Network
R78	100KΩ	½	TV-IR-43	BTS-100K	Horiz. AFC Filter
R79	33KΩ	½	TV-IR-58	BTS-33K	Horiz. AFC Filter
R80	1500Ω	½	TV-IR-1500	BTS-1500	Horiz. MV Cathode
R81	5600Ω	½	TV-IR-52	BTS-5600	Horiz. MV Plate
R82	100KΩ	½	TV-IR-43	BTS-100K	Horiz. MV Grid
R83	150KΩ	½	TV-IR-95	BTS-150K	Horiz. MV Plate
R84	8200Ω	½	TV-IR-60	BTS-8200	Horiz. Peaking
R85	10KΩ	½	TV-IR-64	BTS-10K	Horiz. Hold Control Shunt
R86	100Ω 20%	½	TV-IR-36		Parasitic Suppressor
R87	1Meg 20%	½	TV-IR-11	BTS-1Meg	Horiz. Output Grid
R88	33KΩ 20%	2		BTB-33K	Horiz. Output Screen-See Note 2
R89	1000Ω	1	TV-IR-42	BTA-1000	Horiz. Linearity Coil Shunt
R90	10KΩ 20%	½	TV-IR-84	BTA-10K	Damping
R91	10KΩ	½	TV-IR-64	BTS-10K	Damping
R92	3.3Ω	½	TV-IR-65		HV Rectifier Filament
R93	1Meg 20%	1	TV-IR-66		HV Filter
R94	470Ω	2	TV-IR-90	BTB-470	Focus Coil Shunt
R95	47KΩ	½		BTS-47K	Voltage Divider-See Note 1
R96	47Ω	1	TV-IR-41	BW-1-47	Horiz. Output Cathode-See Note 1

♦ Items R65A, R65B, R65C, C57A, C57B, and C57C are combined into one unit.
Note 1 Note used in all models.
Note 2 Some models use 22KΩ resistor in this application.
Note 3 Some models use 1000Ω ½ watt resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 1.6A	780VCT .180ADC	5VAC ② 3A	6.3VAC ② .4A SEC. 4 6.3VAC ② 1.2A SEC. 5 6.3VAC ② 6A	TV-TR-9		P-3174 ⑤	

⑤ Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TRAV-LER PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	170Ω	1.1KΩ	TV-TR-3	A-8122	A-4000①	TBO-2	Vert. Block Osc. Tran.
T3	300Ω	12Ω	TV-X-108 ②		HVO-7 and		Horiz. Output Trans.
	Tap 10Ω	Tap 7Ω	TV-X-107 ③		MWC-1		
		SEC. 2 1.3Ω					
		SEC. 3 0Ω					
T4	1030Ω Tap 13Ω		TV-TR-8	A-8123	A-3037	TSO-5 ①	Vert. Output Trans.
T5A	19Ω		TV-L-35	DY-7	MDF-70		Horiz. Deflection Coils
B	4Ω		TV-L-27A ④				Vert. Deflection Coils.
T6	460Ω		TV-L-26		MF-2		Focus Coil

① Drill one new mounting hole.
② Used in models 64R50 and 75A50.
③ Used in models 65G50.
④ May be used in some models.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TRAV-LER PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	8.2KΩ	3.3Ω	650Ω	.7Ω		A-3823①	A-3020	RO-16 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	TRAV-LER PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.3Ω	TV-SPK-18 TV-SPK-15 ④	ST-810 Model P69-V	69A2	④ May be used in some models.
	CONE DIA.	V. C. DIA.				
SP2	6"X9"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↶)	TRAV-LER PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.180A	58Ω	2 Henries	TV-FC-1	C-2325	C-2974	TR-3300 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRAV-LER PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω				Wound on a 25MMF. Cap
L3	IF Trap	0Ω				
L4	Ant. Coil	0Ω				
L5	Ant. Coil Shunt	0Ω				
L6	Cathode Trap	0Ω				
L7	Fil. Choke	0Ω				
L8	1st. Video IF	.1Ω	0Ω			
L9	Fil. Choke	0Ω				
L10	2nd. Video IF	.5Ω		TV-L-13		
L11	Fil. Choke	0Ω				
L12	3rd. Video IF	.5Ω		TV-L-13		
L13	Fil. Choke	0Ω				
L14	4th. Video IF	.5Ω		TV-L-13		
L15	Fil. Choke	0Ω				
L16	RF Choke	3Ω		TV-L-20		
L17	5th. Video IF	.5Ω		TV-L-13		
L18	Peaking	4.8Ω		TV-L-14		
L19	Peaking	7Ω		TV-L-32		Wound on 10KΩ Resistor
L20	Peaking	17Ω		TV-L-32		Wound on 3.3KΩ Resistor
L21	4.5MC Trap	1.7Ω		TV-L-16		
L22	Sound IF	1.7Ω		TV-L-16		
L23	Ratio Det. Trans.	4.4Ω	2.2Ω	TV-L-17		Tap 2Ω
L24	Horiz. Osc.	82Ω		TV-L-18		
L25	Width Coil	5Ω		TV-L-34		Models 64R50, 65R50, 75A50
L26	Horiz. Lin.	4.4Ω	1.3Ω	TV-L-29		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			TRAV-LER PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG Slo Blo	2A	TV-F-4	TV-F-2	31300.2	341002	
M2	3AG	.250A	TV-F-1S	TV-F-2	312.250	341002	

MISCELLANEOUS

ITEM No.	PART NAME	TRAV-LER PART No.	NOTES
M3	RF Tuner	TV-TA-3	
M4A	Ion Trap	TV-MA-5	Double Magnet (16RP4)
B	Ion Trap	TV-MA-4	Single Magnet (16GP4, 16TP4, 16KP4, 17BP4)
B2	Trimmer	TV-TC-11	Horiz. Drive
	Safety Glass	TV-DW-12	Models 64R50
	Safety Glass	TV-DW-14	Models 65G50
	Safety Glass	TV-DW-22	Models 75A50
	Knob	TV-K-106	Volume Off/On
	Knob	TV-K-107	Contrast
	Knob	TV-K-105	Selector Range
	Knob	TV-K-103	Selector Channel
	Dial	TV-K-104	Indicator
	Cover	TV-CP-15	Control Panel

WEBSTER-CHICAGO
MODEL 106

Figure 1

WEBSTER-CHICAGO
MODEL 106

GENERAL INFORMATION

The Webster-Chicago Model 106 is a three-speed, single-post, velocity trip type changer designed to play automatically up to a one-inch stack of 7-inch, 10-inch, or 12-inch records, not intermixed, at a speed of 33-1/3, 45, or 78 RPM. The pickup arm will return to its rest position after completing the record and will than automatically shut off.

Two "Off" positions are provided on the speed control mechanism so that when the changer is not in use, and when the speed selector lever is moved to one of these "Off" positions, the idler wheel and speed pulleys are positioned so as not to have any frictional contact; thus, the possibility of a flat spot developing on the rubber drive surface is eliminated.

A record may be rejected at any time, while playing, by pressing the "Reject" button. Manual operation is provided for playing "badly warped" records, "nonstandard," "home recordings," or "inside-out" records.

The motor is designed to operate on 105-120 volts, 60 cycles, AC only.

Manufactured by:

Webster-Chicago Corporation
5610 Bloomingdale Avenue
Chicago 39, Illinois

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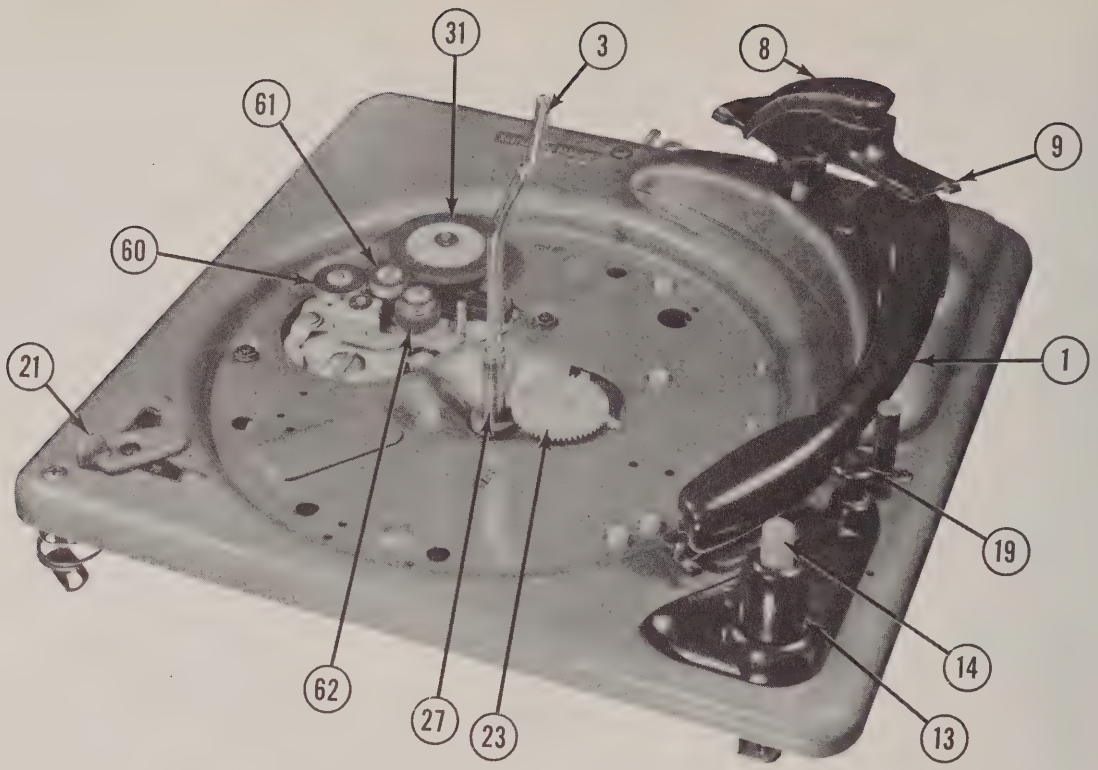


Figure 2

AUTOMATIC OPERATION

1. Turn the record selector post (9) to "10," "7," or "12," depending on size record to be played. The selector post turns in a clockwise direction to the "12" position and counterclockwise to the "10" position. For 7" records, turn the selector post to its intermediate position.

2. Turn the cartridge needle selector to 78 or 33-1/3-45, depending on type record to be played.

3. Turn the "Manual-Automatic" control knob (14) to "Automatic."

4. Move the speed control lever (21) to the proper speed.

5. Place up to a one-inch stack of records on the spindle so that the bottom record rests on the spindle shelf and record selector shelf.

6. Place the record stabilizer weight (8) on the records.

7. Press the "Reject" button (13). This turns the changer on and starts the automatic operation in playing the entire stack of records; upon completion of the last record, the changer will shut off automatically.

NOTE: If the turntable starts rotating but the changer does not cycle when the "Reject" knob is first pressed, push on it again to trip the mechanism.

8. To reject a record while playing, press on the "Reject" button (13).

9. To stop the changer while a record is playing, press on the "Off" button (19); then move the arm to its arm rest. If the changer is not to be used for a period of time, move the speed control lever (21) to one of the "Off" positions.

MANUAL OPERATION

1. Rotate the record shelf (9) to the "12" position to permit more clearance in loading and unloading records.

2. Place the record to be played on the turntable.

3. Turn the "Manual-Automatic" control (14) to "Manual."

4. Move the speed control lever (21) to the proper setting.

5. Move the needle selector knob to 78 or 33-1/3-45, depending on type record to be played.

6. Depress the "Reject" button (13). This starts the turntable rotating.

7. Move the needle to the starting groove of the record.

8. After the record has finished playing, press the "Off" button (19); then place the pickup arm on its rest.

CHANGE CYCLE

The trip dog on the main cam assembly (72) is normally held away from the cam-actuating gear (55) by the

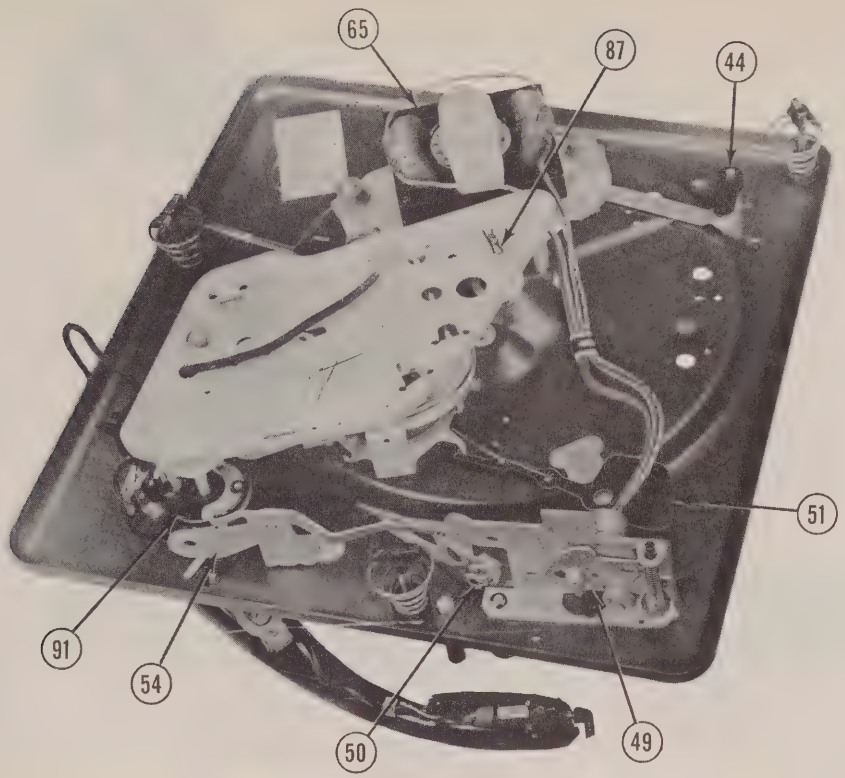


Figure 3

velocity trip and roller assembly (56). This assembly may be moved away manually by pressing on the "Reject" button (13), or automatically, when the pickup arm approaches the spindle at a rate greater than 1/8" per half revolution of the turntable. During normal playing of a record, the automatic trip arm (94) pushes against the velocity trip assembly (56); however, the projections on the cam actuating gear (55) push the velocity trip away from the tripping point, preventing the trip dog from being released.

When the trip dog is released by the fast lead-in of the pickup arm, the dog engages one of the ratchet teeth on the under surface of the cam actuating gear (55), causing the cam (72) to rotate with the gear.

As soon as the cam begins to rotate, the rocker arm roller (75) rides out of the cam detent. The pickup raising lever stud (84), following the cam groove, engages a notch on the raising disc (91), raising the pick-up arm from the record and moving outward.

The rocker arm roller now travels down the incline of the cam (72), pivoting the selector post (9) forward, thereby selecting and dropping a record to the turntable. If the last record is dropped to the turntable, the spindle will raise due to the lack of weight being on it. This allows the no-record lever (80) to drop; however, its full travel is blocked by the finger (78A) which was moved under finger (80A) of lever (80) before the record was dropped to the turntable.

The stud on the raising lever (84) now swings the pick-up arm in to the set-down point. When the record selector (9) is turned to the "10" position, pressure is applied to the raising lever (84) through spring (79), causing the raising lever to follow the outer edge of the cam (72). Also, a lip on the selector lever collar (77) is in contact with "10" setting lever (75A); therefore, as the rocker arm moves forward, the "10" setting engages and moves the "10" latching lever (75B). As a result, the raising disc (91) engages the latching lever (75B) when the tone arm is moved inward. With this engagement, the raising lever (84) slips to engage the middle notch of the raising lever which, in turn, holds the pickup arm in position until it is lowered to the record. When the record selector is turned to the 7" setting, the boss on the collar (77) is turned away from the "10" setting lever (75A). This allows the raising lever (84) to stay in engagement with the outer notch on the raising disc (91). Due to the formation of the cam, the pickup arm will swing in, being positioned and lowered to the starting groove of a 7" record. For "12" set down, spring pressure is released from the raising lever, thereby allowing the raising lever stud to follow the inner edge of the cam which positions the pickup arm for "12" set down.

As the cam continues to turn, the raising lever stud moves up the incline in the cam groove, lowering the pickup arm to the record. At the same time, the rocker arm roller rides up its incline, returning record selector (9) to its normal position.

The hook on the velocity trip (56) catches the trip dog on the cam, disengaging it from the main gear (55). The rocker arm roller drops into the detent of the cam, thus completing the change cycle.

AUTOMATIC SHUTOFF

When the last record is dropped to the turntable and the change cycle is completed, the no-record lever (80) is allowed to drop to its lowest position. Upon com-

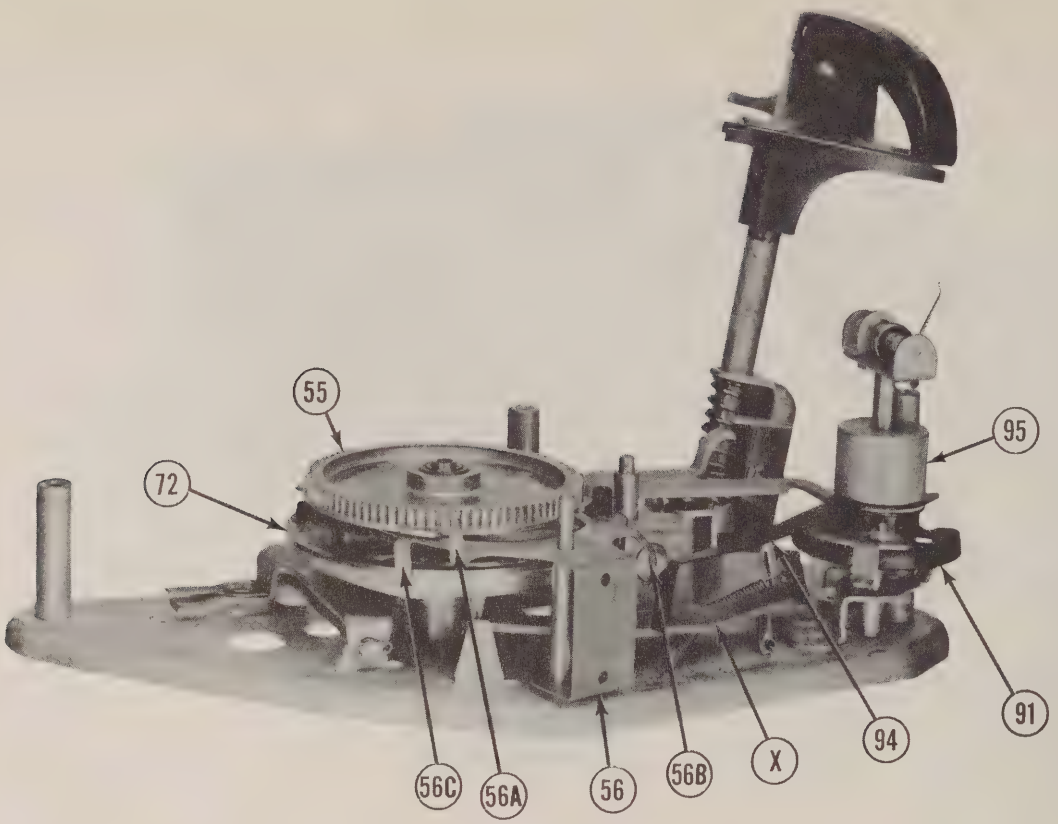


Figure 4

pletion of the last record, the mechanism is tripped, starting a new change cycle; however, during this cycle, the inward movement of the pickup arm is prevented by the engagement of the no-record lever (80) with the raising disc (91). The pickup arm and raising disc are now lowered in this position, causing a finger on the raising disc to contact the automatic shut-off lever (54) which, in turn, trips the switch assembly, shutting off the changer.

ADJUSTMENTS

Pickup Arm Height -

The vertical movement of the pickup arm height is controlled by the angle of the pickup arm raising lever (84). Correctly adjusted, the needle should clear the top record of a 1-inch stack of records by approximately 1/16". To correct the height, make the following adjustment:

1. Place a 1-inch stack of 10-inch records on the turntable.

2. Press the "Reject" button (35) and rotate the turntable clockwise, by hand, until the needle approaches the stack of records.

NOTE: Be sure the raising lever (84) engages the notch on the raising disc (91).

3. If the clearance between the needle and the top record is not approximately 1/16", adjust by bending the raising lever (84) at point (X) (see Figure 4).

CAUTION: Bend slowly, as only a slight change in the angle is required.

Set-Down Adjustment -

Normally, the set-down point is adjusted by turning the eccentric screw (5A) in the hinge (5) (see Exploded View). This screw may be reached through a hole in the top of the pickup arm. Turn this screw clockwise to index the needle in toward the spindle, and counterclockwise to index the needle away from the spindle.

Should further adjustment be necessary, proceed as follows:

1. Turn the eccentric set-down adjustment screw (5A) to a neutral position.

2. Turn the record selector post (9) to the 10-inch position.

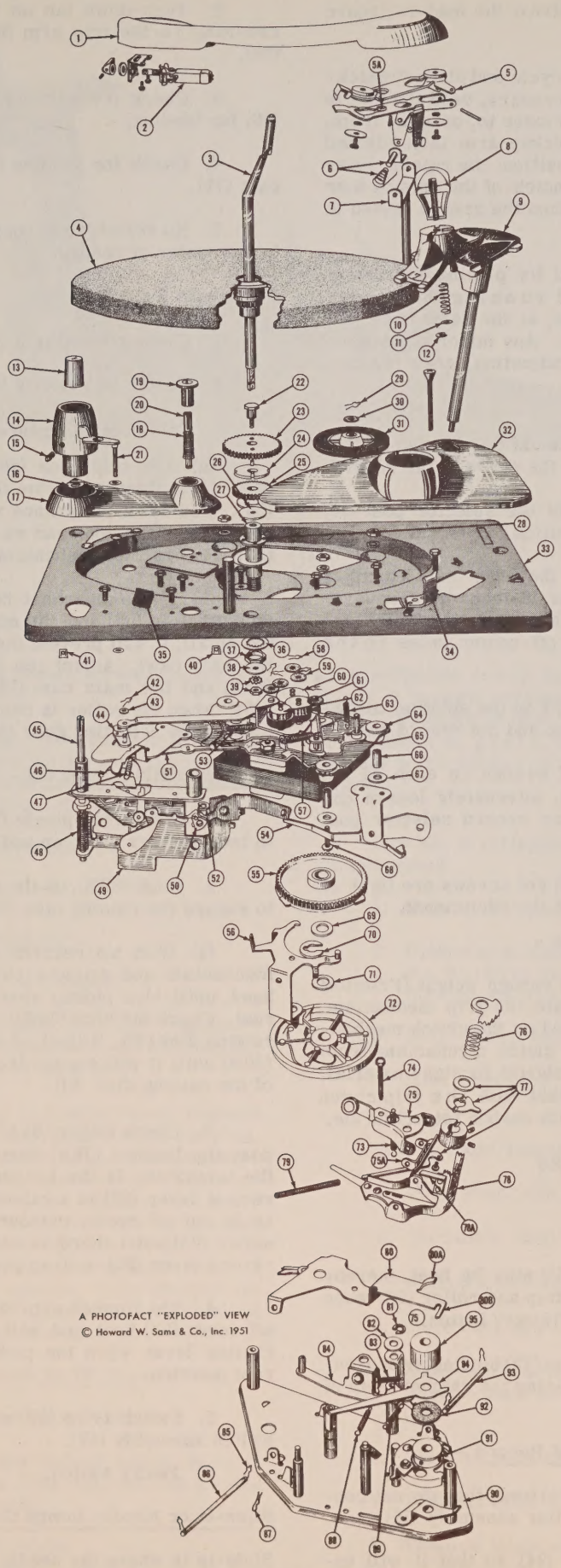
3. Place a 10-inch record on the turntable.

CAUTION: Check the raising disc (91) to see if it has worked loose on the pickup shaft (7). If the disc is loose, position it so that the cone-pointed set screws in the raising disc engage the off-center holes in the shaft.

4. Press the "Reject" button (13) and rotate the turntable clockwise, by hand, until the needle drops to within 1/8" of the record.

NOTE: Be sure the arm-raising lever (84) engages the notch in the raising disc (91).

5. The pickup arm may now be regulated by adjusting the two set screws in the raising disc (91). This is done by loosening one screw and tightening the



A PHOTOFACT "EXPLODED" VIEW
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other until the needle rests above the lead-in groove of the record.

6. Complete the change cycle and place the pick-up arm on the arm rest. If necessary, bend the tongue of the pickup raising disc (91) closer to, or away from, the baseplate post until the pickup arm is positioned over the arm post. In this position, the raising lever (84) should engage the outer notch of the raising disc (91) during the change cycle when the arm is moved to its most outward position.

7. Check the adjustment by placing a stack of records on the turntable and running the changer through several change cycles; at the same time, observe the landing of the needle. Any minor adjustment may be made by the eccentric adjusting screw (5A).

Record Selector Post Angle -

The record selector post (9) should be adjusted so that the curve of the shelf matches the curve of the record:

1. To adjust the angle of the selector post (9), turn the post to the 10-inch position.

NOTE: Make sure that the boss on the collar (77) is facing the 10-inch selector lever and that the set screws in the collar are engaged in the off-center holes in the shaft (9).

2. Place a 10-inch record on the spindle, allowing it to rest on the spindle step and the record shelf.

3. With a No. 8 Bristol wrench in each of the set screws in the collar (77), alternately loosen one and tighten the other until the record selector post angle is correct.

NOTE: Be sure that both set screws are tight at the completion of the adjustment.

Automatic Trip Clutch Friction -

The clutch collar (95) supplies enough weight (Friction) to the trip arm (94) to operate the trip mechanism. No oil or grease should be used on the clutch mechanism as this may prevent the clutch mechanism from operating properly; however, should foreign material, oil, or grease come in contact with the trip clutch mechanism, clean the parts with carbon tetrachloride.

TROUBLES

Changer Fails to Cycle When Reject Button is Pressed -

1. Wire on trip lever (51) may be bent, thereby not contacting finger (56A) of trip and roller (56) when trip lever (51) is actuated by "Reject" button.

2. Trip pawl on main cam (72) binding or broken, resulting in the pawl not engaging the ratchet teeth of the gear (55).

Changer Fails to Trip at End of Record -

1. Automatic trip arm (94) bent, thereby not contacting the velocity trip and roller assembly (56):

(a) Straighten trip arm (94) so that it will engage the turn-down tab (56B) (see Figure 4).

2. Turn-down tab on velocity trip (56) bent up, resulting in the trip arm (94) passing under the trip (56).

3. Check the velocity trip and roller assembly (56) for binding.

4. Check for binding or broken trip dog on main cam (72).

5. No velocity lead-in groove or eccentric groove in the center of record.

Continuous Tripping -

1. Check manual trip lever (51) for binding.

2. Roller on velocity trip lever (56) broken.

3. Too much clearance on hook (56D) of trip (56):

(a) The trip hook (56D) should be adjusted for about 1/64" clearance from the bottom of the main gear (55). Too much clearance may cause the cam pawl to bounce past the hook and re-engage with the main gear (55), causing the mechanism to continue to cycle.

(b) If the clearance between the lip (56C) on the velocity trip (56) and the edge of the main cam (72) is too small, it will prevent the hook (56D) from engaging the cam pawl, Adjust the clearance between the lip (56C) and the main cam (72) so that it will be within 1/64" when the roller is contacting one of the protrusions on the actuating gear (55).

Changer Fails to Shut Off -

1. Check the spindle (3) and no-record lever (80) to be sure they move up and down freely.

2. Hook (80B), on the no-record lever (80), fails to engage the raising disc (91):

(a) With no records on the turntable, trip the mechanism and rotate the turntable clockwise, by hand, until the pickup arm swings out over the arm rest. Check the hook (80B) to see if it drops behind the raising disc (91). Adjust, if necessary, by bending hook (80B) until it will engage the end of the cut-out section of the raising disc (91).

3. Check finger (80A) to see if it is free to drop past the bracket (78A) when there are no records on the turntable. If the bracket (78A) does hold the no-record lever (80) in a raised position when the changer is out of cycle, remove the turntable and adjust screw (74) until there is enough clearance for the no-record lever (80) to drop past the bracket (78A).

4. The formed arm (54A) of the automatic shut-off lever (54) bent and will not engage the ear on the raising lever when the pickup arm is lowered to its rest position.

5. Switch trip (50) missing the trigger on the switch assembly (49).

6. Faulty switch.

Slide-In or Needle Jumps Grooves -

Slide-in is where the needle will touch the first groove of the record properly but will jump the grooves for-

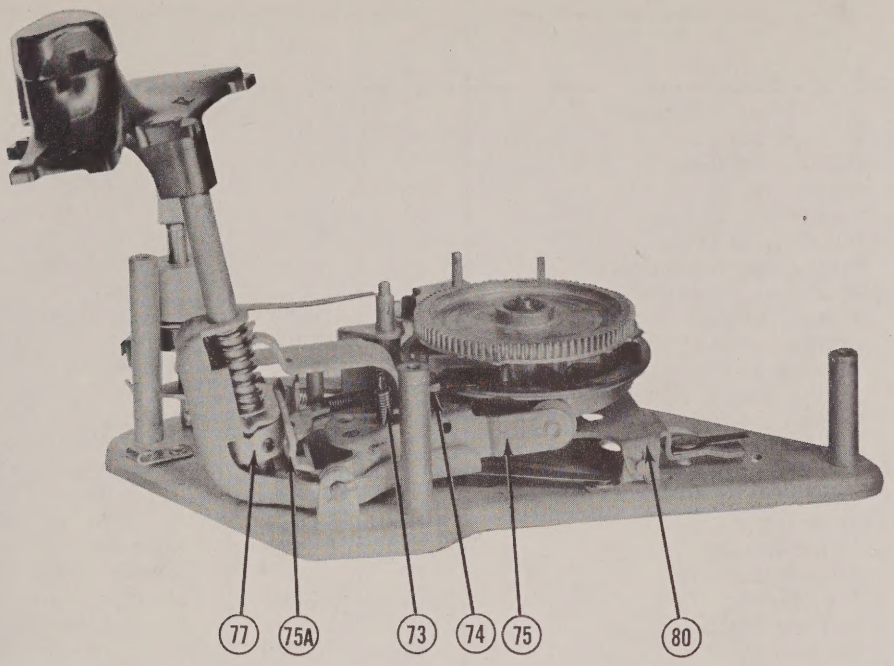

Figure 5

ward or back, as though the needle pressure were too light.

1. Check the needle tip. The standard tip will be especially likely to jump grooves of a microgroove record. Be sure the "microgroove" tip is used for either 33-1/3 or 45 RPM microgroove records.

2. Chipped or damaged needle.

3. Tight pickup cord.

Records Will not Drop to Turntable -

1. Selector post out of adjustment:

(a) Remove turntable and insert 1/4" "Spintite" wrench through hole in baseplate; then turn the adjustment screw (74) in a clockwise direction.

NOTE: After making this adjustment, replace the turntable and play several records. The records should drop to the turntable when the pickup arm is positioned over the arm rest. Also, observe the automatic shutoff on completion of the last record. If the mechanism does not shut off, the record support is positioned too close to the spindle. Turn the adjustment screw (74) counterclockwise and recheck the adjustment.

Pickup Arm Does Not Set Down on 10" Record -

1. 10-inch setting lever (75A) bent:

(a) If the finger on the 10-inch setting lever is bent, the 10-inch lock lever (75B) may not be pivoted so as to engage the raising disc.

LUBRICATION

Lubrication applied at the time of manufacture is usually sufficient for a long period of time; however, should it become necessary to relubricate, due to extreme conditions of dust, heat, excessive wear, or the replacement of parts, the mechanism should be cleaned with carbon tetrachloride and lubricated as follows:

Use No. 10 oil (apply with small oil can or medicine dropper):

1. Motor bearings.
2. Pickup arm shaft (7). Apply one drop each to the bottom bearing point and bracket hole through main baseplate.
3. Ball bearing assembly (28).
4. Idler wheel felt.

A Non-Fluid Lubricant (apply with small brush):

1. Idler wheel link.
2. Turntable shaft stud.
3. Pickup arm hinge pins.
4. Knife edge of pickup arm raising lever (84).
5. Main cam bearing. It is necessary to remove the sub-plate assembly to lubricate this bearing.
6. Teeth of main cam actuating gear (55).
7. Track of main cam (72).
8. Teeth of large and small idler gears.
9. Raising lever bracket bearing surface.

PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	49X124X	Pickup Arm	49	11X715	Switch Assembly
2		Pickup Cartridge	50	45P1149	Switch Trip
3	11X713	Spindle	51	11X158	Trip Lever
4	11X138	Turntable	52	25P447	"C" Washer for "Off" Shaft
5	21X283	Pickup Arm Mounting Hinge	53	46P139	Tension Spring - Index Plate
6	11X386	Pickup Counter Balance	54	11X718	Automatic Shut - Off Lever Assembly
7	11X385	Pickup Shaft Assembly			
8	42P239	Record Weight	55	11X032	Trip Reset Gear
9	49P145	Record Selector	56	11X320	Velocity Trip and Roller Assembly
	11X725	Selector and Weight Assembly			
10	46P232	Record Weight Spring	57	46P187	Tension Spring - Lock Lever
11	25P399	Washer for Record Weight	58	50P034	Hairpin Clip
12	25P447	"C" Washer for Weight	59	25P406	Fibre Washer
13	49P111A	Reject Button	60	11X460	Drive Wheel - 78 RPM
14	11X139	Control Knob	61	11X458	Drive Wheel - 45 RPM
15		Set Screw	62	11X456	Drive Wheel - 33-1/3 RPM
16		Spring Washer	63	46P134	Idler Link Spring
17	49P027	Escutcheon	64	25P363	Rubber Motor Mount
18	46P251	"Off" Spring	65	17X505	Motor and Top Bridge Assembly
19		Shut-Off Button	66	41P592	Motor Mount Sleeve
20	41P842	"Off" Shaft	67	25P367	Motor Mount Washer
21	42X205	Speed Selector Knob	68	26P110	Motor Mount Bolt
22	41P333	Shoulder Screw	69	25P343	Washer - Reset Gear
23	47P024	Large Fibre Gear	70	25P342	"C" Washer - Reset Gear
	11X132	Idler Gear Assembly (includes Items 22, 23, 24, 25, 26, 38, and 39)	71	25P343	Washer - Reset Gear
			72	11X722	Cam and Trigger Assembly
			73	46P161	Tension Spring - Rocker
24	45P342	Idler Gear Coupler	74	26P316	Adj. Screw - Rocker Arm
25	47P023	Small Fibre Gear	75	I1X141	Rocker and Roller Assembly
26	25P284	Coupling Washer - for 11X132	75A	45P1155	10" Setting Lever
27	41P414	Turntable Bearing	76	46P012	Compression Spring - Selector
28	11X058	Bearing Race	77	11X724	Selector Lever and Collar
	25P269	Washer for Bearing Race	78	11X165	Rocker and Lever
29	50P125	Hairpin Clip	79	46P245	Compression Spring - Selector Lever
30	25P030	Felt Washer			
31	11X366	Idler Wheel	80	11X721	No Record Lever
32	45P350	Crescent Plate	81		"C" Washer
33		Base Plate	82		Flat Washer
34		Pickup Arm Lift Stop Bracket	83	46P022	Tension Spring
35	24P022	Needle Pad	84	11X046	Raising Arm Lever (for production 375-112 or earlier)
36	25P333	Lock Washer			
37	26P687	Bearing Nut		11X787	Raising Arm Lever (for production 375-113 or later)
38	25P284	Coupling Washer for 11X132			
39	25P222	Lock Washer - for 11X132	85	50P125	Hairpin Clip
	26P046	Nut - for 11X132	86	41P443	Pin Record Lever
40	26P697	Speed Nut - for Item 17	87	50P204	Spindle Clip
41	26P697	Speed Nut - for Item 17	88	46P139	Tension Spring - Raising Lever
42		Hairpin Clip	89		Tension Spring
43		Flat Washer	90		Sub-Base Plate Assembly
44	17X466	Hub and Lever Assembly	91	11X726	Tone Arm Raising Disc
45	41P444	"On" Shaft	92	23P009	Friction Disc
46	32P044	A. C. Switch	93	41P421	Retaining Pin - Rocker
47	46P117	Trip Lever Spring	94	45P935	Trip Arm
48	46P123	"On" Spring	95	41P576	Clutch Weight